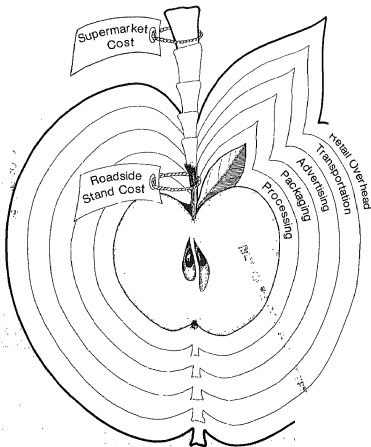


National Food Review

United States
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Economics,
Statistics, and Cooperatives
Service

Fall 1979
NFR-8



In this issue:

Food Marketing Costs

Food Marketing Costs

Food costs involve more than prices paid to farmers. This issue examines some of the causes of higher food prices, and some aids for the food shoppers.

The Marketing Bill, the "total annual charge for transportation, processing, and distributing domestic farm foods," is the primary food cost component. In 1978, marketing costs accounted for about two-thirds of total food costs. And labor costs are increasingly "... a significant portion of the value of food bought in foodstores. . . ."

But consumers attempting to reduce their food bills will find newspapers "... by far the most important medium for advertising by supermarkets." Generics, the non-brand labels, are "big business" today, and farmers' roadside stands and other direct-to-consumer alternatives are being studied under the 1976 Farmer-to-Consumer Direct Marketing Act.



This may be your last free copy. Increased postal and printing costs have forced National Food Review to charge for subscriptions. Each of you will be receiving more information by letter.

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Food Price Situation and Outlook Highlights

Paul C. Westcott
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Retail food prices in 1979 will average about 11 percent higher than in 1978. The farm value of the market basket of domestically produced farm foods is expected to average 11 to 13 percent above 1978, accounting for about two-fifths of the yearly increase in grocery store prices for food. The farm-to-retail price spread is expected to average 11 to 12 percent higher and account for about half of the rise. Prices for fish and imported foods will be about 6 percent higher, accounting for the remaining tenth. Food-away-from-home prices are expected to average about 11 percent higher this year than in 1978.

First Half of 1979

During the first 6 months of 1979, food prices increased at an annual rate of 12.5 percent. In the first quarter, increases in farm commodity prices were the primary cause of a 17.7-percent rise in food prices. High levels of consumer income affected a strong demand for food. Adverse winter weather and labor disputes diminished supplies of livestock and some fruits and vegetables. As a result, retail prices for meats increased 51.5 percent and prices for fresh fruit and vegetables increased 20.2 percent.

Retail food price rises in the second quarter moderated significantly from the large first quarter increases. From March to June, the Consumer Price Index (CPI) for food increased 7.5 percent, much less than the 17.7-percent rise from December 1978 to March 1979.

Marketing costs, rather than farm commodity prices, were the primary source of food price increases in the second quarter. The farm value of the market basket fell steadily in April, May, and June, but the farm-to-retail price spread increased enough in each month to more than offset the farm value declines.

Meat price increases moderated substantially in the second quarter.

Beef prices began to stabilize, reflecting lower cattle prices and a temporary production increase. Pork and poultry prices fell as increased production affected the retail markets.

Fruit and vegetable prices were slightly higher in June than in March. Price declines for fresh vegetables from high first quarter levels did not offset increases in fresh fruit prices, while prices for processed fruits and vegetables increased modestly since the first of the year.

Outlook for Second Half of 1979

Recent moderate monthly food price increases are expected to continue for the second half of the year. The continued weakening of the economy likely will result in some slowing

in demand for food products. Falling real incomes and rising unemployment will lessen demand for beef. Also, the recession and the higher gasoline prices are expected to slow the demand for food eaten away from home.

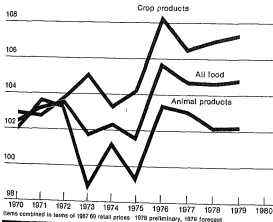
Meats

Retail meat prices are expected to decline further as slaughter increases seasonally. Per capita meat and poultry supplies during the second half of 1979 are expected to be 6 to 8 percent above the first half. The supply increase will be primarily due to a continuation of the large pork production.

Beef supplies will remain near first-half levels, but still below a year earlier. With weakening demand for

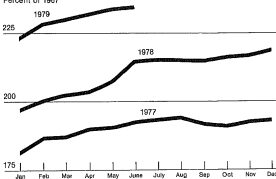
Per Capita Food Consumption

Percent of 1967

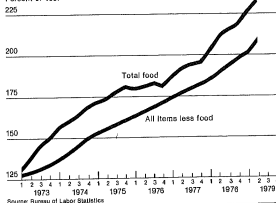


Retail Food Prices (Food at Home)

Percent of 1967

**Consumer Price Index: All Items and Total Food**

Percent of 1967



more expensive beef cuts, retail prices are expected to fall near the end of the year.

Poultry and Eggs

Broiler production will continue to be expanded and will average 8 to 10 percent higher than a year ago, causing retail poultry prices to fall through the end of the year.

Retail prices for eggs have been averaging higher in 1979 than 1978 despite an increase in production. This is largely a result of stronger demand including the increased use of hatching eggs to support the expansion in poultry production.

Dairy Products

Prices of milk and dairy products will likely rise at all levels during the rest of 1979 as supply-demand conditions tighten seasonally. Output during the rest of 1979 is expected to be up slightly from a year earlier.

Fruits and Vegetables

Production of noncitrus fruits is expected to be 9 percent higher than last year. Record crops may be realized for apples, California grapes, nectarines, and plums. With demand good for fruit, and stocks of most processed fruits low, prices for fruit will remain seasonally higher in the third quarter before falling near the end of the year. Prices for fresh vegetables are expected to remain below their high early-year levels.

Production of potatoes likely will be below a year ago. Because of large carryover stocks from last fall, producers have cut back planted acres. Prices for potatoes will decline seasonally but will likely exceed last year's levels.

Cereals and Bakery Products

Retail prices for cereals and bakery products are expected to increase with the rate of inflation in the general economy. The strong export de-

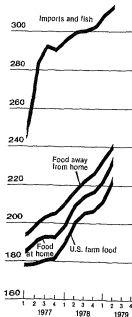
Domestic Food Programs

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mand for grains will affect these prices only minimally because U.S. production and stocks are both large and the farm value of cereals and bakery products accounts for less than one-fifth of the final retail price. □

Major Components of the CPI-For All Foods

Percent



Family Food Programs

Participation in the Food Stamp Program (FSP), the largest domestic food assistance plan, reached 16.6 million people in the second quarter of this year. This is a 14.7-percent increase from the same period in 1978. The increased participation is primarily due to the elimination of the purchase requirement implemented in January 1979 under the 1977 Food Stamp Act.

The value of stamps issued during the second quarter totaled \$1.5 billion, 30.5 percent more than the bonus stamps issued for the same period in 1978. Thus, the average benefit rate has increased due to deduction changes, changed participation standards, and adjustments made to offset rising food costs.

With the removal of the purchase requirement, coupon face value is now the amount of assistance given per recipient. Previously, total coupon issuance included both "bonus" stamps—the actual value of assistance—plus the value of purchased stamps. Eliminating the purchase requirement made food assistance more readily available to those most in need. Recipients now have greater freedom in their consumption decisions since they are not required to use personal income to obtain their food stamps. The potential for error or fraud in the disbursement of stamps is reduced since handling cash is no longer involved.

The 1977 food stamp legislation included a "cap" on annual expenditures for the FSP. The amount for fiscal 1979 was limited to nearly \$6.2 billion. The increased benefits and the increased participation necessitated greater outlays during the year, and the limit would have been reached well before the end of the fiscal year—severely curtailing benefits. These eventualities were averted by congressional authorization of increased appropriations for FY 1979.

By law, food stamp allotments are adjusted twice each year, on January 1 and July 1. Food stamp allotments were increased on July 1 to reflect the 6.8-percent increase in the cost of USDA's "Thrifty Food Plan" (TFP) between September 1978 and March 1979. The 6.8-percent increase in food stamp allotments is less than the rise in the cost of all foods during the same period, which was 7.9 percent, because the TFP selects low-cost foods to achieve a nutritionally adequate diet.

A four-person, eligible household now may receive up to \$204 in FSP benefits per month. The amount of stamps issued to eligible households is based on food costs and participant income. Coupon allotment is determined by subtracting 30 percent of net income from the TFP amount for households of that size. A standard deduction, unearned income deduction, and an excess shelter cost deduction are subtracted from gross income where applicable, making income lower and benefits higher.

A food stamp monitoring system to improve FSP operations has been proposed by USDA in response to a provision of the Food and Agriculture Act of 1977. The system would have three major parts: Quality control reviews to reduce errors; management evaluation reviews to assure better administration; and a planning and evaluation system to correct program deficiencies. States found to have low error rates would receive a 10-percent increase in Federal administrative payments.

Participation in the Special Supplemental Food Program for Women, Infants and Children (WIC) has also increased since the second quarter of 1978. Participation in the same period this year averaged 1.5 million, with Federal expenditures of \$138.2 million. WIC participants receive food from a delivery system operated at

the State level. Participants may receive food through retail purchase systems, home delivery systems, or direct distribution from a local food storage facility.

Both the Needy Family and Supplemental Food components of the Food Distribution Programs have declined in number of participants and cost of commodities in the past year. Just over 60,000 participated in the Needy Family Program, and 100,000 received benefits under the Supplemental Food Program. Schools and institutions have evolved as the primary users of food donations with cash or food stamps accounting for a much larger share of Federal food assistance.

Child Nutrition Programs

USDA currently operates five feeding programs for children aimed at providing day care and school age children with balanced meals. Federal expenditures for these programs during the second quarter of calendar 1979 totaled \$649.7 million, an increase of 5.3 percent from the same period a year ago. Cash payments for the National School Lunch and School Breakfast Programs rose 3.8 and 15.2 percent, respectively. Federal funds for the Child Care Food Program, designed to provide meal service in non-residential child care centers, rose 9.9 percent from the second 3 months of 1978.

Increases in Federal expenditures paralleled sizable increases in participation in the Child Nutrition Programs. In the second quarter of 1979, approximately 3.4 million children participated in the School Breakfast Program, up 41.9 percent from the previous year. Much of this increase may be attributed to the almost 6,000 schools and child care institutions initiating the program during 1978. Approximately 3,000 outlets began providing benefits under the Child Care Food Program in 1978. Participation in the program rose 5.1 percent, to 648,000, in the second quarter of 1979.

Growth in the National School Lunch Program, the oldest of the

Federal Cost of USDA Food Programs (50 States and District of Columbia Only)

Item	1975	1977	1978	1978				1979 ¹
				I	II	III	IV	
	million dollars							
Food stamps								
Total issued	7818	7435	7482	1026	1851	1878	1817	1448
Bonus stamps ²	4667	4376	4568	1183	1133	1148	1126	1446 ³
Food distribution ⁴								
Needy families	8	12	11	3	3	2	2	3
Schools ⁵	448	528	526	186	183	85	185	200
Other ⁶	33	51	93	28	17	22	25	24
Child nutrition ⁷								
School lunch	1505	1547	1849	582	479	226	582	502
School breakfast	118	147	181	53	40	21	58	69
Special food ⁸	240	237	258	38	55	129	38	42
Special milk	147	151	138	39	35	22	43	37
WIC ⁹	182	251	405	89	88	100	117	125
Total ¹⁰	7337	7433	8151	2190	2051	1754	2155	2540

¹ Preliminary.

² For 1978 and 1979, includes Food Certificate Program.

³ Reflects elimination of purchase requirement, January 1979.

⁴ Cost of food delivered to state distribution centers.

⁵ Includes child-care and summer food service programs.

⁶ Includes supplemental food, nutrition program for elderly and institutions.

⁷ Money donated for local purchase of food. Excludes nonfood assistance.

⁸ Includes child-care and summer food service programs.

⁹ Special supplemental food program for women, infants and children began January, 1974. Includes food and administrative costs.

¹⁰ Excludes those food stamps paid for by the recipient. Do not add due to rounding.



Child Nutrition Programs, was less substantial—27.2 million children received meals during the second 3 months of 1979, an increase of approximately 4.8 percent over the previous year.

Funding for all programs is based on a system of per-meal reimbursement rates. These national payment factors are adjusted semiannually in accordance with changes in the series for food away from home of the Consumer Price Index for all Urban Consumers (CPI). The continued upward movement of the CPI assures increasingly higher Federal expenditures.

For July 1, 1979, through December 31, 1979, a basic rate of 17 cents will be given for each lunch served under

the National School Lunch Program, up 1.25 cents from the previous rate. Reimbursement for free lunches rose 4.75 cents to 76.25 cents per meal. States are reimbursed 20 cents less than the free lunch rate for each reduced-price lunch served.

States will also receive an additional 15.75 cents in commodities or cash for each meal. Beginning with the 1979/80 school year, the annual adjustment in the commodity donation rate will be based on changes in the Wholesale Price Index for Food Used in Schools and Institutions. The index is computed using five major food components in the Bureau of Labor Statistics' Producer Price Index (cereal and bakery products; meats, poultry and fish; dairy products; processed fruits and vegetables; and fats and oils).

For the 1978/79 school year, USDA purchased approximately \$599.8 million worth of commodities for schools participating in the National School Lunch Program. This included such foods as peas, corn, potatoes, canned and frozen meat, vegetable oil, dairy products, and grain. No cash-in-lieu of commodity payments will be made for the 1978/79 school year, since the amount of donated foods represents 100 percent of the commodity assistance required by law. Excluded from this are the 10 school districts participating in a study to assess the impact of replacing donated foods with cash payments.

The Secretary of Agriculture establishes income poverty guidelines to be used by States as a basis for determining whether a child is eligible for free, reduced-price, or full-price meals. Income eligibility criteria developed by the States cannot be less than the Secretary's guidelines, nor can they exceed 125 percent of the guidelines in the case of free meals. Eligibility for reduced-price meals is established at up to 95 percent of the income poverty guidelines. These in-

come ceilings apply to the School Lunch, School Breakfast, Child Care, and Free Milk Programs administered by the Food and Nutrition Service of USDA.

The Secretary's guidelines are adjusted annually according to changes in the CPI for food away from home. Effective July 1, 1979, children from families of four earning up to \$8,940 per year are eligible for free meals. Eligibility for reduced-price meals is established at earned incomes up to \$13,940 annually for children from four-person families. Last year's rates were \$8,110 annually for free meals and \$12,660 for reduced-price meals.

In addition to providing meals, USDA is responsible for conducting program evaluation research. Such research is critical to decisions made by legislators, program administrators, States, local program managers, and program beneficiaries and involves monitoring current programs, analyzing program adjustments, and assessing new programs.

USDA has recently awarded a \$2-million contract for a major study of the cost and impact of the Child Care Food Program. Mandated by Public Law 95-627 (Child Nutrition Amendments of 1978), the study will determine the program's administrative and food service costs and the relationship of costs to meal quality. Administrative costs will be evaluated in terms of such factors as the types of institutions, the number of children served, and the location of institutions in urban or rural areas.

Current programs will also be assessed in terms of their impact on States, child care providers, children and their providers, and children and their families. In addition, the study will attempt to identify the barriers to program participation, including licensing problems faced by child care institutions and family and group day care homes. □

Food Spending and Income

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American consumers reduced spending for restaurant meals and snacks during the second quarter of 1979, but total food expenditures rose because purchases in the Nation's grocery stores were moderately higher.

The increase in grocery store spending was largely a result of higher prices. According to preliminary data released by the Department of Commerce, food expenditures during the spring 1979 quarter totaled \$263.1 billion dollars compared with \$260 billion the previous quarter and \$237 billion during the second quarter a year earlier. But all of the quarter increase was due to higher food prices; real food purchases were unchanged from the second quarter of 1978 and fractionally below the first quarter of 1979.

Expenditures for away-from-home eating dropped from \$66.8 billion dollars during the first quarter to \$65.6 billion dollars in the second quarter, in part due to spot shortages and higher prices for gasoline. But, prices for restaurant meals and snacks also rose sharply. When adjustments were made for the price increases, the volume of meals eaten outside the home dropped a near record 5 percent below the first quarter.

Disposable personal income did rise during the second quarter of 1979, about 2 percent above the first quarter; but the gain was inflationary rather than real. Income in constant dollars actually dropped slightly. Expenditures on away-from-home eating usually follow the pattern of change in disposable income. Expenditures for food away from home have remained about 4.2 percent of total disposable income in recent quarters. But during the second quarter of 1979, incomes actually increased relative to spending for food away from home.

Expenditures for food at home during the second quarter were \$197.5 billion, 2.2 percent above the previous quarter, and 11-1/2 percent above the

second quarter of 1978. In real terms, expenditures for at-home eating rose 1 percent during the second quarter. This increase marked one of the few instances in recent years when at-home expenditures advanced while away-from-home expenditures declined. Apparently, the energy crisis which curtailed travel to eating places also influenced an increase in food-at-home expenditures.

Disposition of Personal Income

Not only did real food expenditures drop between the first and second quarters of 1979; real expenditures for other goods also dropped. In current dollars, expenditures on both durables and nondurables showed a slight gain. Only services showed a fractional gain in real terms and almost all of that was for housing services.

Consumer savings apparently increased significantly. Second quarter 1979 savings, at \$87 billion, were 11 percent higher than the previous quarter and 20 percent higher than last year. The savings rate rose from 5 percent this winter to 5.4 percent during the spring.

Total personal consumption expenditures as a portion of disposable personal income dropped from a year ago. Food as a percent of disposable personal income dropped slightly



from a year ago, while the relative position of other nondurables stayed the same. Durables as a percent of income dropped significantly, as auto mobile purchases slackened. The nearly 1-percent drop in durables was partially offset by a nearly one-half percent increase in the portion allocated to services. □

Cost of Food at Home for a Week (June 1979)

	Thrifty plan	Low-cost plan	Moderate-cost plan	Liberal plan
Young couple	\$28.40	\$37.10	\$46.80	\$55.00
Elderly couple	26.40	32.80	41.00	49.90
Family of 4 with preschool children	39.60	51.60	64.60	77.60
Family of 4 with elementary school children	48.00	62.30	78.40	93.90

Grocery Stores and Eating Places:¹ Pacific Areas¹

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Trends in Food Service



□ **Food costs**—During the past 15 years, consumers have been spending more of their food dollars for prepared meals and snacks away from home, a trend that is expected to continue. Since the cost for this is higher than for food prepared at home, consumers' total food costs will rise as food consumed away from home increases.



□ **Food away from home**—Expenditures for food away from home reached \$87 billion in 1978, 35 percent of total expenditures for food, up from 26 percent in 1960 (excludes alcoholic beverages). One-third of all meals and snacks are now eaten away from home, up from one in four in 1960. Factors associated with growth in food away from home include rising incomes, changes in lifestyles and demographic composition of the population, more women employed outside the home, and Government programs.



□ **Fast food sales**—Sales at fast food outlets increased from \$4.9 billion in 1963 to \$19.7 billion in 1978, an increase of over 305 percent, adjusted for inflation.



□ **Food value**—The value of food (including imported food) moving into the away-from-home delivery system is estimated roughly at \$21 billion; the processor value at \$31 billion; and the wholesale value, \$39 billion.



□ **Commodity demand**—The mix of food consumed away from home differs markedly from that purchased from grocers for in-home preparation and consumption. Continued growth in the market for food away from home will have a varied impact on the demand for agricultural commodities as well as the manner in which they are processed, packaged, and marketed. □

Nationally, sales at eating places, measured in constant dollars, rose 20 percent between 1972 and 1977. Sales in the Pacific² area grew even more rapidly at 33 percent. Grocery store sales in the U.S. rose 2 percent between 1972 and 1977. Pacific grocery store sales rose 4 percent—more rapidly than sales at all U.S. grocery stores but still less rapidly than either U.S.- or Pacific-area restaurant sales.

Eating Places

Sales at eating places in the Pacific area were \$10.4 billion—9.5 percent of the area's total retail sales. Eating places had more establishments and more paid employees in 1977 than any other retail business in the Pacific area.

The substantial increase in the area's total eating place sales between 1972 and 1977 did not offset the 16 percent gain in number of establishments. As a result, sales per establishment increased a real, but smaller, 15 percent.

Growth in eating place sales, was influenced by increases in population and personal income. While U.S. population and real income per capita rose 4 percent and 7.8 percent, respectively, population in the Pacific area increased by 7.7 percent, and income per capita by 10 percent between 1972 and 1977. With such favorable growth conditions, eating place sales normally would be expected to increase. In Alaska, there was a 40-percent gain in number of eating places and an 11-percent compound annual increase in sales per establishment. Undoubtedly, these increases

¹This report on retail food sales is based on an advanced release of 1977 Census data. See National Food Review, NFR-7, for details on the sales in the New England area.

²Includes Alaska, California, Hawaii, Oregon, and Washington.



are linked to discovery of oil at Prudhoe Bay and the subsequent development of the Trans-Alaska Pipeline.

Grocery Stores

Grocery stores sales amounted to 20 percent of the area's \$109 billion total retail sales in 1977—more than any other retail business in the region. Population increased at a compound annual rate of 1.5 percent between 1972 and 1977, and real per capita personal income rose 1.9 percent. Although both are favorable conditions for growth, real sales at grocery stores grew less rapidly than either population or income.

Average sales per store rose almost

4 percent between 1972 and 1977. States that had above average gains in store sales generally had above average losses in number of stores. Alaska, the only exception, had increases in both average sales per store and number of stores. Conversely, sales in Oregon decreased in both categories despite a 9-percent increase in population, an 11-percent increase in real income per capita, and a 1.3-percent decrease in number of stores between 1972 and 1977. Increased away-from-home eating and consumer patronage of convenience stores are two of the factors which could account for the decrease in sales per store. □



Percent Change in Sales and Number of Grocery Stores and Eating Places: Pacific Area, 1972-77¹

Area/State	Constant dollar sales, eating places				Constant dollar sales, grocery stores				Area/State
	Average per establishment		Number of eating places	Average per establishment		Number of grocery stores			
	Compound annual rate	1972-77		Compound annual rate	1972-77				
Pacific	5.8	14.8	2.8	15.8	.8	3.8	.7	.6	 Pacific
Alaska	18.4	65.9	10.7	40.1	9.1	33.7	8.0	15.7	 Alaska
California	5.2	10.9	2.1	18.4	.6	2.0	.4	2.1	 California
Hawaii	5.3	8.8	1.7	19.1	.7	5.4	1.1	-1.8	 Hawaii
Oregon	7.1	23.7	4.4	14.0	-.8	-2.5	-.5	-1.3	 Oregon
Washington	8.4	34.7	8.1	11.0	1.3	13.5	2.8	-8.2	 Washington

¹Sales taxes were included with product sales in the 1972 Census of Business but not in 1977. Sales in 1977 were adjusted to com-

penate for these differences, where applicable. Sources: U.S. Bureau of the Census, Census of Business for the respective years.

Farm Foods and the Marketing Bill¹

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Consumers spent \$208 billion in 1978 for domestically produced farm foods, including food purchased directly from retail foodstores, restaurants, and other public eating places.

Personal consumption expenditures (PCE) for food totaled \$239 billion in 1978. This amount is larger than farm-food expenditures because it includes imported foods, fishery products, food furnished to military personnel, and food consumed on farms where produced. These items are excluded from USDA estimates for farm foods. On the other hand, the PCE estimate excludes foods served in institutions and food purchased as a business expense—items that are included in USDA data.

Expenditures for farm foods rose about 11 percent in 1978, mainly due to the 10-percent rise in retail prices, while the volume of farm food marketed increased about 1 percent. The rise in expenditures in 1978 reversed a slowing in the rate of increase during the past 4 years.

Farm Value

The marketing system received about \$67 per \$100 for food products purchased by or for civilian consumers in 1978. This was 17 percent above 1977 and the first significant annual increase in farm value since 1974. Higher farm prices, particularly for meat animals, accounted for most of the increase.

Farm value represented 32 percent of the retail value expenditures for farm foods in 1978. This was 1 percentage point higher than in 1977, but was below the decade average of 33 percent.

These data are a composite of both foodstore and away-from-home food sales. Farm value represents a higher portion of the expenditures through retail foodstores than in away-from-home eating places and reflects the lower services per unit of food marketed. Farm value was about 39 percent of the expenditures at foodstores in 1978, compared with about 19 percent of away-from-home expenditures.

Marketing Bill

The marketing bill is the total unit charge for transporting, processing, and distributing domestic farm foods. It is the difference between what consumers spend for these foods, including both foods consumed at home and away from home, and the farm value (payments to farmers for food products).

Marketing bill data on a year-to-year basis provide a general description of

the changes taking place in the non-farm food sector. Both practical limitations on availability of data and weaknesses in estimating procedures result in a high degree of averaging for some cost estimates. Therefore, the statistics should be accepted as general indicators of nonfarm food costs.

The 1978 marketing bill for farm foods totaled \$141 billion—9 percent higher than in 1977. The 1978 increase was above 1977's 6 percent, but below the double-digit increases in 1976 and 1975. Last year's increase in the bill was the result of rising input costs, particularly for labor and packaging materials.

The increase in the bill accounted for slightly over half of the rise in the expenditures for farm foods in 1978, the smallest contribution since 1973 when the increase in farm value exceeded the increase in marketing costs. While a substantial increase in farm prices pushed food expenditures

Rate of Change: Personal Consumption and Farm Food Expenditures, Farm Value, and Marketing Bill

	1968-78	1973-78	1977-78
	Percent		
Personal consumption expenditures (food) . . .	8.8	10.3	10.3
Consumer expenditures . . .	8.1	8.8	11.4
Farm value	8.3	5.7	18.9
Marketing bill	8.0	10.6	9.0
Labor ¹	9.0	10.2	10.4
Packaging materials . . .	8.5	10.2	8.3
Transportation (hired) ² .	9.2	12.6	8.0
Corporate profits (before taxes)	10.2	12.0	11.8
Other ³	6.8	10.2	6.1

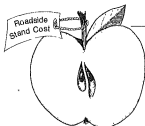
¹Includes supplements to wages and salaries such as pensions and health insurance plans, etc. Also includes imputed earnings of proprietors, partners and family workers not

receiving stated remuneration.

²Does not include local hauling charges.

³Includes business taxes, depreciation, rent, advertising, interest, energy, and other costs.

¹Editors Note: For a more complete description of these data write for a free copy of *Developments in Marketing Research for Food Products in 1978*, AER March 1979, USDA, ERS, National Food Review, No. 0056, S. Bligh, Arlington, D.C. 20250.



higher in 1978, nonfarm costs have been the most persistent source of rising food expenditures. From 1973 to 1978, the marketing bill rose 65 percent, more than double the percentage increase for farm value.

Marketing charges account for a larger portion of away-from-home food expenditures than for foodstore expenditures because of added costs of food preparation and services. In 1978, marketing charges represented 81 percent of away-from-home expenditures, compared with 61 percent for foodstore purchases.

Component Cost

Direct labor is the largest cost of processing and distributing farm foods, totaling \$66 billion in 1978. Containers and packaging materials are the second largest component of the marketing bill. Last year, these costs amounted to \$17.7 billion, up 9 percent from 1977. Higher producer prices accounted for most of the increase. Producer prices of glass bottles and metal cans rose faster than most other packaging materials. Wholesale prices for these products increased 14 percent and 13 percent, respectively. In contrast, paper product prices rose less than 6 percent.

Rail and truck transportation amounted to \$10.8 billion in 1978, an 8-percent increase over 1977, due largely to increased freight rates. Railroad freight rates for food products rose 7.7 percent in 1978. Truck rates also increased, but at a slower rate in 1978, truck rates for fresh fruits and vegetables rose 7 percent.

From 1973 to 1978, transportation costs increased at a compound rate of 12.5 percent, higher than any other cost component. The higher rate was largely due to freight rate increases granted by the Interstate Commerce Commission to offset higher fuel prices and improve the return on capital invested by the railroads.

Profits before taxes earned by cor-

porate firms marketing U.S. farm food accounted for 7 percent of the marketing bill and totaled \$9.5 billion in 1978, about 12 percent above 1977. Most of the profit rise was due to increased sales since profits per dollar of sales remained near the 1977 level for most of the food marketing sector. Profit ratios for the leading food retailers increased slightly from 1977 to 1978. Corporate profits rose at a compound rate of 10.2 percent from 1968 to 1978, compared with 8.0 percent for the total marketing bill.

Labor, packaging materials, transportation, and corporate profits account for about 74 percent of the marketing bill. However, numerous other costs are incurred in performing marketing functions. These costs include business taxes, energy, depreciation, rent, advertising, repairs, interest, and various others. In 1978, these costs totaled \$36.5 billion, 6 percent above 1977. □

Components of Retail Expenditures for Farm Foods Marketing Bill¹



For domestic farm foods purchased by civilian consumers for consumption both at home and away from home, 1978 preliminary.

Away from Home Expenditures

	Public eating places ¹	Institutions ²
	Billion dollars	
	Consumer expenditures	
1968	21.7	5.5
1972	28.9	7.4
1973	31.8	7.8
1974	35.5	9.0
1975	41.3	10.3
1976	45.5	10.8
1977	48.3	11.5
1978 ³ . . .	54.9	12.9

	Marketing bill	
1968	17.0	4.7
1972	23.0	5.9
1973	24.5	5.9
1974	27.1	6.8
1975	31.9	7.9
1976	37.1	8.6
1977	40.9	8.2
1978 ³ . . .	45.0	10.2

	Farm value	
1968	4.3	1.2
1972	5.9	1.5
1973	7.4	1.8
1974	8.4	2.2
1975	9.4	2.4
1976	8.4	2.2
1977	8.4	2.3
1978 ³ . . .	9.9	2.7

¹ Includes restaurants, cafeterias, snack bars, and other eating establishments.

² Includes the value of food served in hospitals, schools, colleges, rest homes, and other institutions.

³ Preliminary.

Labor Costs in Food Marketing

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Labor costs are a significant portion of the value of food bought in foodstores and a major factor in the increasing cost of marketing food products. At one or more stages of the food marketing system, most foods must be cleaned, graded, picked, processed, priced, and stocked on shelves—operations that now require nearly 7 million workers.

Excluding food product costs, labor costs are the largest expense item of firms directly engaged in processing and distributing food after it leaves the farm. In 1978, labor costs accounted for 47 percent of total food marketing costs, and just about equalled the dollar amount farmers

received for foods produced on U.S. farms. These costs consist of wages, salaries, employee benefits, imputed earnings of unpaid family workers who do not receive money wages or salaries, and tips for service.

Labor costs relate only to workers in establishments of processors, wholesalers, retailers, and eating places engaged in marketing domestically produced farm foods. Labor costs related to intercity transportation and the manufacture of supplies, such as food containers, used by marketing firms are not included because these are direct expenses of firms and are components of total marketing costs.

In 1978, labor costs of firms that process and distribute foods grown on U.S. farms rose 10.4 percent, about equal to the average annual rate since 1973. Available information indicates a further increase of 10 to 11 percent in 1979.

Wage Increases

Higher wages coupled with slow growth in productivity were mainly responsible for the upward trend in labor costs over the last 5 years. Hourly earnings of employees of foodstores, food wholesalers, food manufacturers, and eating places increased at an average annual rate of 8.4 percent between 1973 and 1978. For all workers in the economy, the rate of increase was 7.6 percent. Hourly earnings of food industry workers increased only slightly more than the 8-percent annual average rate of increase in prices of all items in the Consumer Price Index.

In the last 5 years, retail foodstore workers received bigger increases in wages than other workers in the food industry. One reason for their larger rate of increase, 9.2 percent, is the relatively high proportion of union contracts containing provisions for cost-of-living adjustments to wages

based on changes in the CPI. Average hourly earnings of food industry workers continued to increase in 1979. In the first quarter, average hourly earnings were more than 8 percent above a year earlier.

Union Settlements

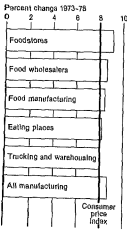
About 987,000 food industry workers are covered by major collective bargaining contracts. Workers belonging to smaller bargaining units probably would push the number of union workers in the food industry to about 1.5 million.

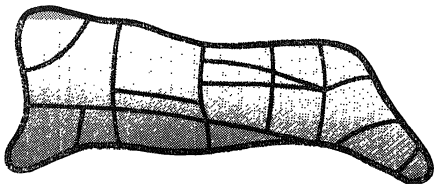
The majority of foodstore employees belong to the United Food and Commercial Workers International Union (a June 1979 merger of the Retail Clerks International and the Amalgamated Meat Cutter and Butcher Workmen Unions). Most workers in the food-processing industry belong to the Teamsters and United Food and Commercial Workers Unions.

Major collective bargaining contracts affecting 430,000 workers, primarily in food retailing and processing, will be renegotiated in 1979. This total includes contracts in the food-manufacturing industry affecting 204,000 workers, or roughly 60 percent of that industry's workers covered by major collective bargaining agreements. The majority of the workers affected are employed by the meat-packing and canned fruit and vegetable industries. Negotiations in meat-packing will determine wages and benefits for 80 to 85 percent of industry workers.

Collective bargaining in the retail food industry is highly decentralized and involves many groups of workers and many locations. This results in considerable variation in pay levels and negotiated wage increases within the industry. However, wage increases appear to average about the same as for the economy as a whole. The Bureau of National Affairs, a national

**Average Annual Changes
in Hourly Earnings
and Consumer Prices**





news gathering organization, reports that the medium first-year wage increase so far this year in union contracts covering all industries has been slightly over 8 percent. An examination of 17 wage settlements in food retailing covering 142,000 workers over a period of a year also showed a median pay increase of about 8 percent the first year and a total wage increase of about 23 percent over the life of 3-year contracts.

Based on recent wage increases, upward pressure on labor costs in food marketing appears to be continuing at the approximate rate of recent years. One possible exception is among segments of the industry with largely nonunion workers. There is evidence that the wage guideline of 7 percent has imposed somewhat of a lid on wage increases for nonunion workers, since employers can more easily impose the guideline on non-union workers than on union workers. Bureau of Labor Statistics data for all industries in the Economy show that percentage wage increases for non-union workers averaged 7.3 percent in the first quarter of 1979 compared with 8.2 percent for union workers.

The gap between union and non-union wage increases continues to ex-

ist, in part, because many union workers get cost-of-living adjustments to wages based on rising consumer prices. For these workers, double-digit inflation will result in wage increases in excess of other workers. However, the Council on Wage and Price Stability indicates that it may be necessary to modify the wage guideline to restore equity to nonunion workers, as well as union workers whose pay arrangements do not include cost-of-living adjustments.

In addition to wage increases negotiated in 1979, labor costs will rise this year because previous union contracts provide for deferred wage increases averaging 5.9 percent for 433,000 workers in food retailing and 5.7 percent for 104,000 persons in food manufacturing. Food manufacturing workers covered by contracts without cost-of-living (COLA) clauses will receive wage increases averaging 6.4 percent versus 4.8 percent for workers with COLA clauses in contracts. In food retailing, 75 percent of union members are covered by COLA's, compared with only 36 percent in food manufacturing.

Minimum Wage

The minimum wage was increased

9.4 percent in 1979 from \$2.65 per hour to \$2.90 per hour. This increase mainly will affect wages of workers employed in public eating places. This should have little impact on total food marketing costs since only a relatively small portion of total food industry workers are earning minimum wages. For example, when the minimum wage was raised in 1978, only 18 percent of the workers in public eating places received a pay increase to reach the new minimum.

Employee Benefits

Hourly employee benefit costs in the food, beverage, and tobacco industry rose from 81 cents in 1967 to \$2.06 in 1977—154 percent—while wages for time workers increased 93 percent. Both the amount and growth rate of employee benefit costs in food manufacturing are similar to the average for all industries.

Hours worked in food marketing grew at an annual rate of 1.8 percent during the last 5 years and likely will increase again this year, contributing to the increase in total labor costs. In food retailing, hours worked have risen as a result of the trend toward Sunday openings, longer operating

Generics Revisited

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hours during the week, and the growth of such service-oriented operations as store bake shops and delicatessens. In the food service industry, growth in volume of food sold has caused a rise in employment and hours of work.

Productivity growth in food marketing has been very slow since the early 1970's. Output per hour of labor input, in industries primarily manufacturing domestically produced food,

increased 1 percent a year from 1972 to 1977. Productivity in retail foodstores was 6 percent lower in 1977 than in 1969.

The slow growth of productivity is the result of such factors as fewer major technological innovations; reluctance of business to invest in new plants and equipment because of rising costs; lack of confidence in the economy; and increases in marketing services. □

In the year since this topic was first covered in the *National Food Review*, generic labels have become big business.¹ Today, approximately 125 grocery firms sell generic labeled items in about 11,000 stores. These stores sell from 1 to over 150 food and nonfood generic labeled items. The nonfood items have been more popular than food items.

Recent interviews with representatives of grocery firms found divergent views on proportionate sales of generic labels. About half of those interviewed stated that generic products were increasing in sales; others said that sales of such products have reached a plateau. This article investigates the reasons for the apparent differences in views.

Expansion-Contraction

Generic food labels now account for 9 to 12 percent of sales in any given product category. Their share of total food and nonfood sales is about 5 to 15 percent. One executive said that the generic labeled products have captured 28 percent of the sales of canned green beans.

Top sellers in canned generics are kernel corn, green beans, peas, whole tomatoes, mixed cocktail fruits, tomato catsup, and penches. These products are generally used as ingredients in other dishes where color and quality are not considered critical.

In areas where a majority of the chains and independents sell generic grocery labels, growth has slowed. The generic product has become commonplace—just another label sold at the lower end of the price scale. Some of the retailers surveyed stated generic sales have "dented but not severely injured" the national and private label sales. They maintain that

Average Hourly Earnings for Food and Other Industries

	1973	1978	Change 1973 to 1978	
			Dollars per hour	Value Percent
Foodstores	3.38	5.24	1.86	55
Food manufacturers	3.85	5.80	1.95	51
Meat packing	4.77	7.05	2.28	48
Poultry dressing	2.66	3.79	1.24	46
Dairy	3.93	5.81	1.88	48
Processed fruits and vegetables	3.28	5.06	1.78	54
Bakery products	4.01	5.98	1.97	49
Sugar and confectionery	3.71	5.62	1.91	51
Food wholesalers	3.80	5.93	2.03	52
Eating places ¹	2.17	3.21	1.04	48
Composite food marketing ²	3.34	5.00	1.66	60
Transportation				
Trucking and warehousing	5.27	7.76	2.48	47
Railroads	5.40	7.87	2.47	46
All manufacturing	4.07	6.17	2.10	62
Total private nonagricultural economy	3.94	5.89	1.95	44

¹Excludes tips and meals. ²Production employees in food manufacturing and non-supervisory employees in foodstores, wholesale trade, and eating places.

¹Editors Note: The September 1978 issue of *National Food Review* featured an article on generic labeled products sold in grocery stores.



generics have been traffic builders. The reaction of many retailers who compete with generics but do not sell them has been to feature "low prices—everyday."

In marketing areas where only a few stores sell generics, retailers are promoting the little-known national, controlled, and second-line labels instead. Those selling packer or second-line labeled products are promoting them as moneysavers, stressing that these moneysavers are of similar quality to national brands, and are packed and/or distributed by known companies.

Lower Price Increase

The price spread between the generic and national brand labels of the 13 food items surveyed earlier by

USDA widened between spring 1978 and spring 1979. The average price of generic labels increased approximately 4 percent while the average national label price increased around 10 percent. Even though there have been wholesale price increases, many retailers apparently consider generic products as volume-builders and are reluctant to raise prices on these labels to levels that would fully reflect the increased costs at the wholesale level.

Margins

For most grocery businesses the gross margin on a given national label is around 20 to 25 percent. The margin on generic labeled products is about 10 to 20 percent. Adjusted gross margins on the national brand

labels are often lower than 20 to 25 percent due to special promotions and sales but are still higher than the generic labeled products. But the lower gross margins of generics can be deceiving. Generally, generics come in only one size, are rarely advertised, and are usually placed in one section of the store. Therefore, inventory, handling, and shelf space costs are lower than for national or private labels. Although generics can have a smaller gross margin than national brands, they have apparently been profitable, partly a result of the sales volume generated.

Four-Tier Market

The generic labeled products have reshaped the retail food market. There is now a four-tier label market. The first tier is the premium label for consistently high-quality products that command a top price. The second tier is just under premium or fancy quality. The third label is generally of average quality. The second- and third-tier labels are bought according to store specifications. The quality of these products depends on their yield, type, grade, and characteristics.

The fourth tier is the generic label containing a preponderance of USDA grade C or standard grade product. The success of these products can be attributed to consumer awareness of the availability of good and nutritious quality food products at low prices.

What's New in Generics

One of the newer developments is generic produce. These products were introduced in early 1979 in the Mid-

Savings Offered by Generic Produce

Item	Regular produce	Generic produce	Savings offered by generics ¹	
			Cents per pound	Percent
Potatoes, red	107	89		26.4
Apples, Delicious	354	435		19.0
Oranges, Valencia	318	294		10.8
Carrots	291	260		14.1
Onions, yellow	115	84		28.2
Bananas	303	263		16.5

¹Percent savings calculated on a per pound basis to compensate for differences in pack-

age sizes between generics and regular produce. Percentages are rounded.

Newspaper Advertising in Food Marketing

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west and are moving very slowly to other parts of the country. In July 1979, there were approximately six grocery chains selling generic produce. The produce sold is known to the trade as "hardware"—potatoes, apples, onions, and carrots.

Grade standards for fresh fruits and vegetables usually define such factors as color, shape, size, maturity, and the number and degree of defects. The lower grades now being sold as "generics" are just as nutritious as the higher grades. The difference is mainly in appearance, taste, and preference.

The typical range of grades includes U.S. fancy, U.S. No. 1, U.S. No. 2, and U.S. No. 3. The standards are used extensively as a basis for trading between growers, shippers, wholesalers, and retailers. They are used to a limited extent in sales from retailers to consumers.

Generic produce is generally U.S. No. 2 or U.S. No. 3 grade. This produce is usually packaged for sale in quantities ranging from 3 pounds to 25 pounds. Some savings come from limiting selection to only one size container for each generic product. Usually the package size is somewhat larger than what is generally sold at retail.

Retailers contacted by USDA indicated that consumers can expect to save from 5 to 40 percent over regular produce prices. Average prices were computed for each kind of product over a 3-week period from May 28-June 16, 1979. Savings from six generic produce commodities ranged from 2 to 50 percent, but the average saving was about 20 percent over the regular produce price.

The industry officials interviewed stated that they expect generics to capture 5 to 25 percent of food and non-food sales through 1980. Generic is the low price label that is here to stay even if it is not called "generic." □

Much attention has been focused on the relationship between advertising and food prices. Critics argue that advertising food products only increases costs—costs that consumers ultimately must pay. Others contend that the advertising is quite beneficial from an information perspective, particularly in light of its relatively small cost.

Newspapers are one of the principal means of advertising by the food industry, second only to television. In 1978, almost \$1 billion was spent for newspaper ads by firms in the food marketing system (foodstores, food manufacturers, and eating and drinking places). These ads are read by three out of every four consumers. Among all retailers, grocery stores rank third in the volume of newspaper advertising purchased; food manufacturers rank fifth among all manufacturers.

Response to 'I Check the Food Ads in the Newspaper Before Going Shopping' (1977)



Source: USDA

Volume Rises

The food system's total newspaper advertising expenditure rose 60 percent between 1974 and 1978, from \$537 billion to \$893 billion. Three-fourths of that \$336-million gain was due to increased expenditures by retail grocers. Retail grocers spent over \$600 million on newspaper advertising in 1978, a 70-percent increase from 1974. Food manufacturers spent about \$150 million, and eating and drinking places accounted for another \$125 million.

Much of the gain between these two periods was due to higher prices. The price of advertising space in newspapers rose almost 50 percent between 1974 and 1978, compared with a 30-percent increase for all producer prices. Sharply higher prices for paper, energy, and labor contributed to the rapid increase in advertising prices.

Actual space purchased by food advertisers increased about 13 percent between 1974 and 1976, but declined between 1976 and 1978. This pattern closely parallels the decline in real food expenditures between those 2 years.

Food Retailers

Retailers account for 70 percent of all food advertising in the newspaper. However, the relative share of newspaper advertising paid for by food retailers may be considerably below that figure since a substantial portion of space purchased by retailers is actually subsidized by food manufacturers for advertising specified products.

Retail foodstores account for about 22 percent of all retail sales, but during the past few years, they have accounted for only 9 percent of total retail advertising in newspapers. Retail foodstores spent more than \$600 million for newspaper advertising in 1978, much less than department stores (\$1.6 billion) and general mer-

chandise stores (about \$900 million).

Nevertheless, newspapers are by far the most important medium for advertising by supermarkets. According to two recent surveys,¹ about two-thirds of the estimated \$1 billion annual advertising budget for supermarkets is spent in local newspapers. This contrasts sharply with only about \$1 out of every \$15 directly allocated to newspaper advertising by national manufacturers.

Local newspaper advertising is well suited to food retailer needs. Food prices are more variable than nonfood prices, and newspaper ads accommodate these changes. Newspaper ads can be used to report prices on a larger number of items than television or radio.

The rapid growth of manufacturers' and in-store coupons have also encouraged newspaper advertising. Although the cost per unit message is higher for newspaper than for spot radio and television, newspaper advertising can be more effective in reaching the shopper in the narrowly defined geographic markets served by food stores.

According to the Newspaper Advertising Bureau (NAB) survey of 292 leading retail food companies, the space allocation of newspaper advertising by product category differs from actual grocery store expenditures. Red meats, fish, and poultry accounted for 21 percent of store sales in 1977 (Annual Consumer Expenditure Survey). The NAB showed that 25 percent of newspaper advertising expenditures was for red meats. Fresh produce accounted for about 10 percent of both sales and advertising. Dairy advertising space—at 5 percent of the total budget—was below 7 percent of sales. Nonfood newspaper

Newspaper Advertising Expenditures for Food Retailing and Manufacturing, 1974-78

	Food retailers and manufacturers	All retailers and manufacturers ¹	Food as a percent of total	Food at home expenditures	Food advertising to food at home expenditures
	\$Million	\$Million	Percent	\$Million	Percent
1974	478	8748	8.3	128,426	0.4
1976	570	6178	9.2	140,291	0.4
1978	671	7183	9.4	149,506	0.4
1977	718	7650	9.1	161,436	0.4
1978	796	8808	9.0	177,666	0.4

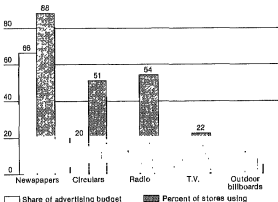
¹Includes classified advertising which has nearly doubled since 1974 to about \$6 billion in 1978. Does not include eating and

drinking places.

Source: Newspaper Advertising Bureau

Independent Supermarkets Use of Advertising

Percent



Source: Progressive Grocer.

¹Progressive Grocer, Newspaper Advertising Bureau.

advertising expenditures were about 5 percent of the total although nonfood items account for about a fourth of all supermarket sales. Dry goods, however, which accounted for only 28 percent of sales, took up about 40 percent of the newspaper advertising budget—perhaps reflecting allowances by manufacturers.

Food Manufacturers

About 7-1/2 percent of the approximately \$2 billion spent by food processors on advertising in 1978 was allocated to local newspapers. Another \$15 million was spent on ads in Sunday supplements. Finally, a portion of the approximate \$250 million spent by supermarkets on advertising dry groceries was subsidized by food processors.

About 80 percent of the food processors' advertising budget is for television. This medium is better suited for the noisier oriented forms of competition, such as image creation and consumer persuasion. Television advertising (particularly network advertising) can reach a larger audience, thus reducing the cost per unit message. A significant portion of this advertising is also aimed toward non-newspaper readers such as children.

The entire manufacturing sector relies less on local newspaper advertis-

ing than does the retail sector. Food manufacturers account for about 10 percent of local newspaper advertising paid for by all manufacturers, slightly above the share foodstores have of the total retailing sector. Between 1974 and 1978, food processors increased expenditures on local newspaper advertising by about a third—from \$115 to \$154 million. However, the cost of newspaper advertising during that same period rose about 50 percent. Consequently, actual space purchased appears to have fallen.

Eating and Drinking Places

Newspapers do not play an important role in the advertising of eating and drinking places. In 1978, these establishments spent \$123 million for newspaper ads—less than 2 percent of total retail newspaper advertising.

Sales in eating and drinking places rose 75 percent between 1974 and 1978—from \$41 billion (7-1/2 percent of all retail sales) to \$71 billion (9-1/2 percent of all retail sales). Yet, newspaper advertising by these firms rose about 56 percent. As a result, newspaper advertising expenditures as a percent of eating and drinking places' retail sales, which was less than 0.2 percent in 1974, had declined even more by 1978.

Several factors could account for the relatively low use of newspaper advertising by eating and drinking places. A significant portion of the increase in away-from-home food market sales has been in fast food places. Since much of this market is aimed at children, radio, television, and billboards are more effective modes of advertising. Second, unlike food purchased in the grocery store where food prices are constantly changing and there is a selection of 5,000 to 8,000 items, menus in the away-from-home market rarely change and prices are much less volatile. Moreover, the rapid rise in couponing, which lends itself to newspaper advertising, has only recently become prevalent in the food-away-from-home market.

How Useful to Consumers?

The role of newspaper advertising in the food system raises questions about its value to consumers. Are consumers helped through the dissemination of price information more than they are hurt through higher food costs?

Fundamental to evaluating the relative importance of this cost is determining how much value the consumer actually derives from newspaper advertising. In part, such advertising supports an independent medium of information so consumers who read newspapers receive a return in the form of lower newsstand prices. But, more important, advertising informs consumers about price changes and, thus, it enhances price competition.

Newspaper advertising tends to be stronger in relaying information than other advertising media. Consumers can more easily compare prices in different stores by reading newspaper ads than by watching television, listening to the radio, or by reading billboard ads. But the number of items advertised in newspapers can only be

Index of Newspaper Advertising Space Purchased in the Food Marketing System

	Retail grocery	Eating and drinking places	Food manufacturing	All retailers
	1974=100			
1974	100	100	100	100
1975	107	109	101	98
1976	116	113	103	100
1977	113	110	104	101
1978	116	107	91	105

Source: NAB

The Convenience Store Industry

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minuscule compared with the number of items actually carried. In most instances, retail grocers will advertise those items having a price advantage to attract customers; items not advertised may be higher priced.

In a recent USDA survey of major food shoppers, 5 out of every 10 said they "always" or "almost always" check the food ads in the newspaper before going shopping. Another 20 percent reported "sometimes" and about a fourth said "seldom" or "never." The shopper's age and household size both appear to influence whether the shopper checks food ads in newspapers before shopping. As the age of the shopper increased and as the number of household members increased, there was a greater likelihood of checking food ads. Regionally, 70 percent of respondents from the North Central region and only 50 percent from the South read food ads before shopping. Female shoppers were more apt than male shoppers to look at food advertisements before shopping.

Putting costs in perspective, between 40 and 50 cents out of every \$100 spent in the grocery store goes to pay for newspaper advertising. About 19 cents out of each \$100 in sales at eating and drinking places goes to newspaper advertising. So in total, between 35 and 40 cents out of each \$100 spent on food is allocated to local newspaper advertising. The total elimination of this expenditure category therefore would not appear to save consumers much money. □

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Convenience stores have experienced one of the most spectacular growth rates in all of food distribution. Believed to have been started by the Southland Ice Company in 1927, convenience stores (or c-stores) did not become a significant component of the food market until the sixties. There were about 500 convenience stores in 1957, with combined annual sales of about \$75 million. By the end of 1978, there were an estimated 33,900 c-stores and sales exceeded \$10.7 billion.¹ Today there are more convenience stores than supermarkets.

The number of convenience stores rose at an average compound rate of about 9.8 percent during the last 8 years. Sales increased 15 percent per year. Even after adjusting for the effects of inflation, sales grew almost 8 percent per year. When gasoline sales are included, the growth rate is 19.5 percent in current dollars. This rate of growth is even faster than for fast food restaurants which often are viewed as the fastest growing segment of the food industry.²

Convenience Stores Defined

Convenience stores are small, self-service shops that stay open long hours. The stores have limited parking, and, usually, are found in a residential location. They provide a fairly full line of grocery products although the number of brands and package sizes is limited.

Convenience stores usually average about 2,400 square feet. Supermarkets built in 1978 averaged about 32,500 square feet. Weekly sales averaged \$6,078 for c-stores, compared with \$79,727 for supermarkets in 1978. The

average customer purchase in convenience stores is only \$1.72 compared with \$10.63 in supermarkets. About 22 percent of the c-stores are open 24 hours a day. Less than 5 percent of the supermarkets are open all day. Most c-stores provide parking for 5 to 15 cars, and carry only about 3,000 items compared with 10,000 to 12,000 items in a typical supermarket.

Convenience stores are unique retail outlets. Although they sell items in most of the same product categories as supermarkets, the items tend to be sold in smaller quantities and in more immediately consumable forms than those in supermarkets. For example, c-stores sell individual, cold bottles or cans of beer, soft drinks, and fruit and vegetable juices. Ice cream and snack foods are also available in small quantities (popsicles, candy bars, beef jerky, etc.). C-stores sell 95 percent of their cigarettes by the pack compared with only 25 to 30 percent in supermarkets. Ice and magazines are very important sales items in c-stores.

Most convenience stores sell food ready for immediate consumption. As a result, convenience stores are increasingly competing with fast food restaurants. About 72 percent of convenience stores now have fast food departments. Ninety-seven percent sell sandwiches, 72 percent sell hot dogs, 59 percent sell pizza, 62 percent sell soup, 98 percent sell coffee, and 72 percent sell donuts.

Convenience stores have had spectacular growth in gasoline sales. In 1970, less than 1,000 c-stores sold gasoline. By the end of 1978, the number had increased to more than 16,600—an average annual increase of over 42 percent—and an additional 4,950 gasoline installations are expected during 1979. The Nation's largest c-store chain, the Southland Corporation, reported that 28 percent (1,857) of their stores had self-service

¹Excludes gasoline sales, which amounted to about \$5 billion in 1978.

²Since 1972, sales of fast food outlets increased at an annual compound rate of 14.2 percent (4.9 percent in real terms).

gasoline which generated about 13.4 percent of their sales. In 1974, gasoline accounted for only 2.7 percent of their sales.

Shoppers who patronize convenience stores are somewhat different than those who shop in supermarkets. Reports indicate 55 percent of the c-store shoppers are adult males, 33 percent are adult females, and 12 percent are children under 12. Women make 95 percent of the major weekly trips to the supermarket.

Costs and Prices

Overall, prices tend to be higher in c-stores than in supermarkets. These higher prices can be attributed to differences in operating expenses, cost of goods sold, and gross margins.

Operating costs account for about 23 percent of the sales in convenience stores, compared with 18 to 19 percent for supermarkets. C-stores are frequent targets of robberies and experience a high employee turnover. In 1978, 28 percent of the managers and 38 percent of the assistant managers left convenience store firms compared with 12 percent of the full-time employees who left supermarkets in 1977.

Convenience stores typically resist selling items that require backroom preparation such as fresh meat and produce, thus helping to keep their labor costs to a minimum. Although most convenience stores try to operate efficiently, their volume is small so they cannot achieve the economies possible in larger supermarkets.

Convenience stores most likely pay more for many of their products than do supermarkets since they require relatively small quantities per delivery. And with their greater emphasis on nonfood sales, c-stores rely more heavily on route delivery people (rack jobbers). Because of the services performed by rack jobbers, the cost of goods is likely to be greater than if

Product Category Sales and Gross Margin for Convenience Stores and Supermarkets

Product Category	Sales as percent of total sales		Gross margin as percent of sales	
	Convenience stores	Supermarkets	Convenience stores	Supermarkets
	Percent			
Bear	10.2	2.8	26.0	26.6
Soft drinks ¹	9.8	2.9	29.2	23.3
Milk	9.6	3.3	18.0	20.6
Bread/cakes ²	6.0	3.8	26.6	20.2
Snack foods ³	4.6	1.7	31.1	26.3
Confectionery ⁴	4.6	1.2	33.0	30.8
Meat & Deli ⁵	4.3	18.6	33.4	20.7
Ice cream	2.6	1.4	32.9	26.4
Frozen foods ⁶	2.0	6.6	40.3	29.0
Other dairy	1.9	6.8	27.3	22.1
Cookies & crackers	1.8	2.1	29.3	26.8
Wine	0.7	0.3	30.3	39.3
Produce	0.7	8.2	33.2	31.6
Other grocery items ⁷	16.2	20.2	32.7	18.8
Total food	73.6	80.8		
Tobacco products	12.6	4.6	27.6	10.6
Health & beauty aids	4.9	4.4	34.2	28.3
Magazines ⁸	3.3	0.9	22.8	36.3
Other nonfoods ⁹	2.6	6.8	36.4	22.1
Housewares	0.7	2.0	36.7	38.8
Misc. & seasonal ¹⁰	2.1	0.8	36.8	11.8
Total nonfoods	26.4	19.2		
Total	100.0	100.0	29.9	22.7

¹Includes mixes in supermarkets, does not include frozen drinks in c-stores. ²Bakery for supermarkets. ³Includes nuts. ⁴Only candy and gum for supermarkets. ⁵Meat in convenience stores account for 3.7 percent of sales and carry 34 percent gross margin, for supermarkets sales are primarily fresh meats. ⁶Includes ice. ⁷Includes fast foods and frozen beverages in c-stores. ⁸Includes stationery and school supplies in super-

markets. ⁹For supermarkets includes soaps and detergents; paper, film & film laundry & ironing aids; cleaners; soft goods; waxes & polishes; cleaning implements; and misc. household supplies. ¹⁰Unclassified group¹¹ for supermarkets.

Sources: Convenience Store News, Vol. 18, No. 16 (May 15, 1978) and Chain Store Age/Supermarket, Vol. 53, No. 7 (July 1979).



purchased through a central warehouse that provides little or no service beyond delivery.

The higher unit operating costs mean that convenience stores also have higher gross margins (or markup expressed as a percentage of sales) than supermarkets. The higher average gross margin is also due to a somewhat different product mix. Convenience stores tend to handle the items that have relatively higher gross margins in grocery stores. However, the beer and milk categories generally have lower gross margins in convenience stores than in supermarkets so that c-stores can maintain a competitive price on these items to draw customers to their stores.

Franchised Growth

One way convenience store companies have added new stores has been by franchising. Between 4,700 and 5,800 convenience stores were franchised at the end of 1978. The Southland Corporation reported that 39 percent of their stores were operated by independent franchisees or were available for franchise at the end of 1978. Other large companies vary from no franchised stores to all franchised.

The Commerce Department recently reported that more than 16,200 convenience stores are associated with 25 companies that do at least some franchising. These companies primarily operate in the South. Over 50 percent of their stores are located there; less than 9 percent are located in the Northeast with 25 percent in the West. However, most of these companies' franchises are located in the West (over 38 percent), while only 18 percent are located in the South.

Convenience store chains dominate the industry—93 percent of the stores are owned by companies with 11 or more stores. In spite of this fact,

convenience stores have been described as mom-and-pop grocery stores with modern supermarket techniques. Franchising has helped preserve this link to the small locally owned store.

Future Growth

Convenience stores are facing opposing forces which will determine the extent of their future growth. There is now one convenience store for every 2,200 households in the United States. Florida is the most saturated State with 1 convenience store for about every 1,000 households. There are no precise figures on how many families are needed to make a c-store economically viable. It is possible, however, that in higher cost areas, c-stores would have to generate more volume than could be expected from a thousand families.

Another factor that may decide whether the convenience store industry can continue to grow rapidly is competition. C-stores must compete for business against grocery stores, fast food outlets, drugstores, department stores, newsstands, gasoline stations, and other shops. In grocery retailing, these stores could impact on the economic viability of c-stores.

There has been a fairly rapid growth of limited assortment stores, box stores, and warehouse stores. But since these stores do not carry all items, c-stores could emerge as the outlet to serve some of these needs. On the other hand, lower prices have been the main consumer draw for these newer stores. Price-conscious shoppers could begin to avoid c-stores because of the generally higher prices. Also, many retail companies

are building even larger supermarkets or superstores, drawing from large geographic areas to generate the sales volumes they need to be economically viable. With fewer larger stores, many consumers may turn to convenience stores to save travel time to the store and shopping time within the store. Within other retail segments, some drugstore chains are adding many of the same food product lines as convenience stores, thus taking a share of the c-store market.

With the increased cost of energy, consumers may be more inclined to stop at a c-store located near home. Perhaps c-stores will see an increase in pedestrian and bicycle customers. On the other hand, many consumers are doing more one-stop shopping, trying to cut down on the number of shopping trips.

These factors point to mixed possibilities for growth. Many industry observers believe that the convenience store industry will continue to grow, but not as rapidly as in the past. Future growth will probably be concentrated outside the South. □

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Farmer-to-Consumer Marketing

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Farmer-to-consumer marketing, sometimes called direct marketing, generally refers to sales by farmers through roadside stands, farmers' markets, and at pick-your-own (PYO) farms.

The Farmer-to-Consumer Direct Marketing Act, passed in October 1976, was designed to support and promote direct marketing activities. It instructs the USDA to conduct annual surveys of direct marketing activities throughout the Nation. However, limited funds kept the first study to six States—Indiana, Michigan, New Jersey, North Carolina, Ohio, and Pennsylvania. These States were selected because of the availability of sampling lists and the importance of direct marketing to their agricultural economies. The initial survey was completed in December 1978.

Michigan was the leader in direct market sales with nearly \$76 million, followed by Pennsylvania, Ohio, Indiana, New Jersey, and North Carolina. Michigan also had the largest number of growers involved in direct marketing—over 23,000 in 1978.

Floral and nursery products were major items in 1978 direct marketings. Michigan led with over \$22 million in direct sales; Ohio ranked second with over \$17 million.

Pennsylvania led with over \$10,000 in average sales per grower. New Jersey ranked second, with \$5,658 per direct marketer, followed in order by Ohio, Indiana, Michigan, and North Carolina.

Among fruits sold by direct marketing, apples led the way and Michigan was again the leader with nearly \$11 million in sales. Strawberries, along with peaches and nectarines, were the next most popular fruit marketed directly from farmer to consumer.

Sweet corn was by far the most popular vegetable sold directly from farmer to consumer. Pennsylvania and Michigan each had slightly over \$2 million in direct sales of sweet



corn in 1978. New Jersey, a very close third in corn sales, led the six-State grouping in direct tomato sales with nearly \$1.5 million. Tomatoes were the second most popular vegetable to be marketed directly from farmer to consumer.

Pennsylvania was unique among the six States surveyed in having the only significant amount of dairy products sold directly to consumers—nearly \$27 million. This is accounted for by Pennsylvania's tradition of direct sales of fluid milk and other dairy products through "milk juggers." These independent producer-retailers market their State-inspected products at their own retail outlets. Over 250 such operations were licensed to do business in Pennsylvania as of January 1979.

North Carolina moved a wide variety of commodities directly to consumers during the 1978 marketing year. North Carolina was the only State in

the survey to report direct sales of pecans, okra, lima beans, green peas, and "sided greens."

Sixty-four percent of farms in New Jersey used direct marketing, and direct sales accounted for almost 8 percent of gross cash farm receipts. Michigan ranked second in relative importance of direct marketing to farm sales—36 percent of the farms sold directly to consumers and direct sales represented almost 4 percent of gross cash receipts.

A companion mail survey of direct marketing activity among farmer cooperatives is currently underway. More than one-third of the cooperatives have already responded to the survey which began in May 1979. Based on the responses for nearly 350 cooperatives, about 22 percent are involved in direct marketing, in relation to total goods marketed, however, the quantities appear to be small. □

Farmer-to-Consumer Sales, 1978

	Indiana	Michigan	New Jersey	North Carolina	Ohio	Pennsylvania
Fruits and Nuts:						
Apples	\$3,716,873	\$10,588,647	\$2,749,414	\$866,889	\$3,480,701	\$5,874,280
Strawberries	626,878	4,230,835	1,471,600	1,862,803	2,863,514	2,324,533
Other berries	812,288	1,470,498	613,605	333,816	446,585	178,281
Peaches and nectarines	1,102,363	1,674,755	1,411,681	994,075	410,736	2,376,818
Cherries	—	689,327	16,372	—	44,736	316,849
Grapes	—	162,262	30,840	267,719	191,465	132,460
Pears	98,068	384,656	63,776	—	113,416	365,558
Plums	—	213,210	—	—	—	88,416
Misc. fruit and nuts ¹	74,343	36,231	6,716	39,806	16,709	24,228
Total fruit and nut sales	6,478,274	19,440,421	6,262,982	4,464,677	7,897,332	11,622,130
Average fruit sale per farmer	6,501	3,858	8,997	1,863	11,114	12,561
No. of farmers selling	1,178	6,358	696	2,868	683	928
Vegetables and Melons:						
Sweet corn	1,261,678	2,190,426	1,846,476	202,805	1,679,650	2,325,076
Melons	567,806	181,661	178,134	269,796	528,433	414,604
Cabbage, cauliflower and sim.	364,121	403,963	142,213	105,885	71,666	194,424
Tomatoes	671,986	696,074	1,484,737	266,220	380,167	680,100
Green beans	506,808	263,837	179,893	281,651	93,831	170,844
Peppers	169,503	57,286	111,271	—	168,046	127,063
Potatoes (white)	195,877	546,633	121,562	—	377,353	731,461
Pumpkins	109,657	37,872	28,989	—	43,143	136,138
Squash	226,204	223,936	168,238	38,806	52,353	117,976
Cucumbers	104,760	108,470	104,278	62,462	34,716	164,357
Asparagus	—	208,478	—	—	—	—
Sweet potatoes	—	—	26,112	122,804	—	—
Green peas	—	—	—	403,743	—	—
Misc. vegetables ¹	1,149,666	3,660,835	265,822	249,791	61,611	149,788
Total vegetable sales	6,306,244	8,618,361	4,878,963	1,681,063	3,489,648	5,211,800
Average vegetable sales per farmer	\$2,324	\$1,247	\$4,754	\$360	\$7,093	\$2,348
No. of farmers selling	2,245	6,831	1,023	5,666	467	2,220
Other products:						
Floral and nursery products	\$11,047,968	\$2,293,804	\$12,463,421	\$11,781,968	\$17,106,282	\$11,788,402
Livestock, poultry, and prod.	304,020	1,111,641	1,281,799	330,029	1,161,612	6,783,612
Christmas trees and forest products	473,279	677,444	423,787	448,717	893,488	361,843
Honey and syrups	189,214	599,300	71,604	109,549	368,442	238,813
Processed fruit products	194,673	1,826,678	652,621	—	283,490	117,011
Dairy products	—	—	—	—	—	26,616,612
Other misc. products ¹	9,847,720	21,400,826	1,864,144	881,736	3,654,190	365,878
Total other products sales	21,066,761	48,009,294	16,723,821	13,661,899	23,644,406	61,724,623
Average sales of other products	\$4,304	\$3,606	\$4,828	\$2,941	\$3,804	\$13,260
No. of farmers selling	4,862	13,468	3,464	4,609	6,216	3,904
Total direct sales all products:						
	\$32,842,299	\$75,966,076	\$27,986,768	\$19,897,629	\$34,671,386	\$68,668,682
Total farmers selling direct	6,936	23,691	4,688	11,730	6,846	6,660
Average sales per farmer	\$4,733	\$3,220	\$5,968	\$1,706	\$4,968	\$10,310
Total number farms in State:						
	90,000	66,000	7,800	100,000	96,000	61,000
Number farms selling direct	8,639	23,591	4,688	11,730	8,846	6,660
Percent selling direct	7.8	36.3	64.3	11.7	7.1	10.9
Percent cash receipts derived from D.M.	1.0	3.7	7.7	.6	1.1	3.2

¹ The commodities in the misc. and other misc. category included those where 60 percent or more of the estimate was realized from 10 or fewer reports. Because of the rarity of reported sales, the value represented by expanded sales of these items may over or under represent the actual income from the

sales of these specific items directly to the consumer. However, the total value of all sales direct to consumer are aggregated across all commodities which reduces the effect of the individual commodity variability and results in a reliable total.



Changes To Meet Dietary Goals

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The Senate Select Committee on Nutrition and Human Needs issued its report "Dietary Goals for the United States" in early 1977. The report was important, some argued, in that it began to deal in a straightforward way with the contemporary human nutrition problems in the United States. Rather than focusing on the minimum requirements for dietary balance, the need for a moderation in intake of certain foods was stressed.

Others argued just as forcefully that the available scientific evidence could not support the specific recommendations made in the committee report. And that in the absence of such information, consumers were being advised to change their eating habits in ways that could bring economic hardships to part of the food and agriculture system without improving the national health.

Adjustment Required

Putting aside the question of scientific validity, there is a question about the magnitude of the adjustment that could be required by the food and agriculture system if consumers voluntarily began to adjust eating habits more in line with the recommendations published in the "Dietary Goals." If, for example, the required adjustments are small, more credence would seem to be given to those favoring the changes. If, on the other hand, the changes imply rather significant shifts in the income positions of some in the food industry, programs to encourage the changed eating habits likely would be more difficult to obtain.

Central to answering these questions is some agreement on just how the recommendations translate to changes in the mix of agricultural products produced and consumed.

Many authors, of course, have developed "diets" that are consistent with the goals. But such diets are not sufficient to answer the questions

being posed. First, food choice is quite personal, and is the result of a complicated set of interacting forces. How one person actually selects foods to make his diet more consistent with the goals may be quite different from what another person does. Second, individual diets can only be translated rather imperfectly into a national food use pattern.

Eating Habits

Estimating the net effect of changed national eating habits on agricultural producers thus requires a four-step procedure. First, the recommended changes must be translated into a national food use pattern that is nutritionally consistent with the goals. Then, the food use pattern must be converted to pounds of agricultural product. Third, some assumption is needed about the likely speed of the adjustment process. That is, how fast can consumers be expected to make the implied changes? Finally, the impact of these changes must be evaluated giving due consideration to the biological nature of the agricultural production process. Only the first two steps are dealt with in this article. Subsequent reports will deal with the question of economic impact.

Recommended Changes

The Dietary Goals suggest the following changes:

- ☐ Consume only as much energy as is expended to avoid overweight.
- ☐ Increase consumption of complex carbohydrates and "naturally occurring" sugars.
- ☐ Reduce consumption of refined and processed sugars to about 10 percent of total energy intake.
- ☐ Reduce overall fat consumption to about 30 percent of energy intake.
- ☐ Reduce saturated fat consumption to account for about 10 percent of total energy intake; and balance that with polyunsaturated and mon-



ounsaturated fats, which should each account for about 10 percent of energy intake.

- ☐ Reduce cholesterol consumption to about 300 milligrams a day.
- ☐ Limit sodium intake by reducing salt intake to about 5 grams a day.

These changes are to be accomplished by making the following alterations in food selection and preparation:

- ☐ Increase consumption of fruits, vegetables, and whole grains.
- ☐ Decrease consumption of refined and other processed sugars and foods high in such sugars.
- ☐ Decrease consumption of food high in total fat, and partially replace saturated fats, whether obtained from animal or vegetable sources, with polyunsaturated fats.
- ☐ Decrease consumption of animal fat, and choose meat, poultry, and fish which will reduce saturated fat intake.
- ☐ Except for young children, substitute lowfat and nonfat milk for whole milk, and lowfat dairy products for high-fat dairy products.
- ☐ Decrease consumption of butter, fat, eggs, and other high cholesterol sources.
- ☐ Decrease consumption of salt and foods high in salt content.

Food Waste

The Recommended Dietary Allowance (RDA) for the U.S. population in 1977 was 2,250 calories per capita per day. Because some food is wasted, the national food supply will need to contain more than 2,250 calories per person. But how much more?

An analysis of household garbage in Tucson, Arizona, corrected for the presence of disposals, estimated that

Energy Sources from Current U.S. Consumption and Pattern Meeting Dietary Goals

	Unit	1977 consumption, assuming:			Consumption adjusted to meet:			
		All food consumed	90% of meat and poultry fat trimmed	2/3 of milk fat skimmed	All Goals Pattern A	Slightly higher protein Pattern B	Pattern C	Recommended by Dietary Goals
Energy value per capita per day	Calories	3,380	3,140	3,020	2,800	2,800	2,800	2,800 ¹
Calories from:								
Protein	Pct.	12.1	13.0	13.5	14.5	14.8	15.0	10-14
Fat	Pct.	42.0	37.6	35.2	32.8	32.8	33.4	27-33
Saturated	Pct.	14.4	12.0	10.1	9.6	9.8	10.0	8-12
Mono-unsaturated	Pct.	14.1	11.6	10.7	10.1	10.2	10.5	8-12
Polyunsaturated	Pct.	13.5	14.0	14.4	12.8	12.9	12.9	8-12
Carbohydrate	Pct.	46.0	49.4	51.4	53.0	52.3	51.6	63-63
Refined sugar	Pct.	17.1	18.4	19.1	12.1	12.1	12.1	8-12

¹Assumes that 20 percent of the calories are discarded.

Changes in U.S. Consumption to Meet Dietary Goals

Food Group	Consumption per capita, 1977	Change in consumption ¹		
		All goals Pattern A	Slightly higher protein Pattern B	Pattern C
	Pounds		Percent	
Meat	187.7	-10	-10	-3
Poultry	83.9	-2	0	0
Fish	16.7	-2		0
Eggs	34.3	-26	-18	-18
Dairy products excluding butter (calcium equivalent)	47.9	-10	0	0
Butter	4.3	-20	-20	-20
Other fats and oils	54.4	-20	-20	-20
Fruits, fresh equivalent	209.3	+10	+5	+5
Vegetables, fresh equivalent	257.4	+10	+5	+5
Potatoes, fresh equivalent	127.0	+10	+5	+5
Dry beans, peas, nuts	8.6	0	0	0
Grain products	14.3	+30	+27	+23
Sugar, sweeteners	133.4	-42	-42	-42
Coffee, tea, cocoa	12.8	0	0	0

¹Assumes that 20 percent of the calories are discarded.

Relating Diet-Health Concerns to Food Choices

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about 16 percent of the edible food used in households is discarded (27 percent in middle-income households). This study, however, did not measure the waste of fluids, or the amount of human food fed to pets, put on compost heaps, or otherwise discarded outside of the family trash can. Studies conducted by the U.S. Army and in school lunchrooms, measured about 15-percent plate waste. These estimates, however, take no account of preparation waste or the loss of leftovers in the kitchen. A 1977 report prepared by the U.S. Comptroller General estimates total consumption loss by both households and institutions at slightly over 20 percent of edible food by weight.

Using all these studies it is our best judgment that an average of 20 percent of the calories in food purchased at retail are discarded. Therefore, 2,800 calories per capita per day are required, allowing for discards, to meet the 2,250 calories actually suggested by the RDA.

Food Changes

The nutritive value of the food purchased at retail in 1977 was used as the basis for all calculations. These nutritive values are computed annually from quantities of over 250 reported food items. Since the Dietary Goals recommend eating less meat and reducing the butterfat level of milk, the nutritive value data were adjusted to reflect a removal of half of the dietary fat from meat and poultry and two-thirds of the butterfat from dairy products.

An iterative approach was then employed in order to determine the least change in consumption necessary to bring the current diet in conformity with the Dietary Goals. Each time the figures were calculated, incremental adjustments were made in the quantity consumed of each major food group in terms of protein, fat, carbohydrate, and energy value until

the totals fell within the constraints set by the Goals.

Some researchers have argued that keeping the protein level within the 10-14 percent range stated in the Senate Committee report may not be strictly necessary. Therefore, two additional patterns were calculated each with a 15-percent protein level.

All nutrients were calculated for each of the patterns and compared with the RDA for the population and with the goals for fatty acids and cholesterol (allowing for 20 percent discard). All patterns fell within acceptable levels.

Meeting Dietary Goals

Meeting all of the constraints set by the Dietary Goals would result in a per capita consumption pattern with 10 percent less meat and milk; slightly less poultry and fish; about a fourth less eggs; 20 percent less fats and oils; and about half the sugar than consumed in 1977. The consumption of fruits, vegetables, and potatoes would have to increase 10 percent, and grain products consumption per capita would need to be increased about 30 percent.

Relaxing the protein constraint to 15 percent of calories yields food use patterns which allow more meat, poultry, fish, milk, and eggs than the lower-protein-level patterns. This change also allows the consumption of less grain products and less fruits and vegetables.

The patterns allowing the protein level to reach 15 percent of calories could probably be accepted by many people. Pattern B requires only a 2 percent decrease in overall meat, poultry, and fish consumption, moderate increases in fruits and vegetables, and no change in quantity of dairy products after removal of two-thirds of the butterfat. The major changes from current food choices would involve sharp decreases in sugars, fats, and eggs. □

Food consumption patterns in the United States have been significantly altered by demographic, economic, and lifestyle changes, an increasingly complex marketplace, and the growth of technology.

Scientists, nutrition educators, health professionals, and others have recently expressed concerns about the effects of changing eating habits on the health of the population. Expanded nutrition information and education programs to help diverse segments of the population choose their diets may fail without more substantive research on the basic question: Why do people eat as they do?

Studies of consumer concerns regarding health, food safety, and nutrition have found that characteristics such as a homemaker's age, education, family size, and income are related to concerns and to stated changes in food use. At the same time, studies of food consumption, expenditures, and actual purchase of food items have concentrated on socioeconomic, and demographic factors without considering concerns and attitudes about foods.

The unique aspect of this study is that it gathered both food consumption data and information about food and nutrition-related concerns nearly simultaneously from the same sample. The identification of groups by their level of concern and actual food use may well facilitate the tailoring of nutrition education messages to the needs of diverse groups within the population.

Study Design

The study summarized here was conducted by the Market Research Corporation of America (MRC/A) in 1975. Food items which were highly correlated with homemaker concerns about one or more diet-health issues were identified. The diet-health issues included general nutrition, caloric

reduction, food additives, health foods, and convenience or prepared foods.¹ A nationally representative sample of 2,000 households participated.

Each sample household kept a 2-week diary of all food and beverages consumed both at home and away. In addition, upon diary completion, homemakers indicated the strength of their diet-health concerns by using a 7-point scale ranging from 1—"disagree completely" to 7—"agree completely" to answer a series of attitudinal statements. A respondent's nutritional concern score for a food issue was the average of the scores attached to a subset of statements.

For each food issue, the 2,000 sample households were ranked by numerical concern scores into four groups (quintiles) of 500 households each. Diary reports were tabulated by food category and subcategory for each quintile. Finally, a search for sharp positive or negative trends in the relation of food consumption and concern scores was made. In other words the study identified food items for which either very heavy users or light users/nonusers tended to be most concerned about when responding to the food issue in question. For example, heavy sugar-substitute consumption was positively linked with strong concern for lowering caloric intake; light use or nonuse of potato salad was also highly correlated with the same concern.

The study focused on the extremes of various eating patterns rather than the middle ground. In doing so, it provided important insights about the distinguishing characteristics and behavioral (food choice) differences of homemakers who profess strong con-

cern about food issues. It leaves to alternative studies the task of clarifying the dynamics of the most common food choices.

Since respondents could be concerned about some subjects and relatively unconcerned about others, the makeup of corresponding groups varied from issue to issue. The study did not address such questions as "do people concerned only about lowering caloric intake make food choices different from those of people concerned about food additives or health foods as well as calories reduction."

Concern About Calories

"I buy more low-calorie foods than most housewives do."

The demographic characteristics of homemakers concerned with lowering caloric intake differed markedly from those of the total sample. Homemakers with children, particularly children between the ages of 6 and 12, homemakers under age 45, and homemakers with large families were more likely to be concerned about low-calorie intake than other homemakers. In contrast, retired households, households in which the homemaker was over 45 years of age, and one- or two-member households were least likely to be concerned about caloric consumption.

Households in which homemakers were strongly concerned about lowering caloric intake were heavy users of liquid or powdered proteins and other weight-control aids, low-calorie dressings, sugar substitutes, and fruit salads. These households also used more marmalade and mild cheeses. Though most cheeses are relatively high in fat, consumers may consider them a satisfying diet food when eaten in small quantities. One possible link between marmalade consumption and interest in caloric reduction is that marmalade may be considered a low-calorie substitute spread for butter or margarine which are higher in fat.

Food avoided by households concerned about caloric intake included potato salad, peanut butter, jelly, sugar, butter, cakes, biscuits, chocolate milk, presweetened cereals, popcorn, potato chips, extruded snacks, pretzels, pancakes and waffles, candy, popsicles, and homemade cookies.

Adequate Nutritional Balance

"I make every possible effort to see that my family eats really nourishing meals."

Although a substantial majority of homemakers felt that they serve nourishing food, they were less confident about their nutrition knowledge and whether or not their diets are balanced. Only the top quartile of households exhibited higher-than-average consumption of the foods highly correlated with nutrition concern. This suggests the existence of a relatively small group of homemakers who are highly concerned, somewhat knowledgeable about nutrition, and forceful enough to impose systematic dietary practices on household members.

The high correlations between concerns about caloric reduction and food choices were largely negative—that is, concern about calories was linked with avoiding particular foods. In contrast, all high correlations between concerns about adequate nutritional balance and food choices were positive, which suggests that nutritive concerns prompted the increased use of specific foods. The absence of 1 negative correlations in this case suggests that, even among people who express strong concerns about nutrition, there is confusion about how to achieve a diet which provides adequate nutrients without excess calories, fat, sugar, cholesterol, and salt.

The list of strong positive correlations begins with nutritional supplements, followed by two interesting surprises—cheese "for pizza" and cream cheese. It is likely that pizza is

¹Abrams, J. J. "Determining Consumer Demand and Marketing Opportunities for Nutrition Products," *Food Technology*, September 1978, pp. 79-85.



considered a nutritionally superior alternative to extruded cereal-product snacks. Cream cheese may have a positive image as wholesome and free of preservatives, which in the minds of some consumers is synonymous with "nutritiousness." Dry mix salad dressing, presumably associated with a high incidence of eating torse green salads, was also strongly correlated with concern about nutrition. In addition, high correlations were found for various whole wheat, fortified, and specialty ready-to-eat cereals and hot oats, as well as with fruit in refrigerated, frozen, and dried form and in citrus and noncitrus fruit juices. Households highly concerned about nutrition used a lot of peanut butter, jam, honey, marmalade, and molasses.

Preservatives and Food Additives

"If I had a choice, I'd prefer a product without preservatives to one with preservatives."

Comparison of the average concern scores suggests that the public is more concerned about preservatives and additives than about calorie reduction and nutritional balance.

The food items with a high positive

correlation with concern about additives included nutritional supplements, cream cheese, pizza cheese, and lamb. Some homemakers may view these mild cheeses as free from any additives. Lamb may appear because it is primarily available in fresh, raw, unprocessed form. Perhaps, too, some homemakers feel that lamb, which comes from very young animals, is less likely than beef or pork to carry feed additives, hormones, or antibiotics. Foods avoided by those most concerned about preservatives and additives are easier to explain. They included bacon and pork cuts, presweetened ready-to-eat cereals, corn chips, and biscuits.

Health Foods

"Health food are not any better for you than the well-known brands."

For the sample as a whole, the average concern score indicated a slight rejection of health foods. Households strongly rejecting health foods were more likely than others to use low-calorie salad dressings, cream cheese, margarine, and instant breakfast. Those most partial to health foods were more likely to consume stewed or boiled dinners, perhaps eschewing fried foods.

Convenience Foods

"Many commercially-prepared foods are as good as homemade or fresh foods."

Homemakers' ready acceptance of commercially-prepared foods was positively correlated with use of frozen TV dinners, commercially-prepared baby foods, instant breakfast, and ready-to-eat pies. Those partial to convenience foods were light users or nonusers of homemade cakes and cookies, mild cheeses, and hot entrees made with rice. The most likely reason for low consumption of entrees made with rice is that few such dishes are commercially prepared. Frequent users of mild cheeses were

more likely than others to do a substantial amount of home cooking from scratch and to collect cookbooks and recipes, and thus, were less inclined to use convenience foods.

Concerned But Confused

Scores show strong consumer interest in the safety and nutritional quality of foods. Concern with physical fitness and preventive health measures such as increased exercise and diet modification appears to be growing nationwide. A USDA survey shows a significant share of U.S. households accepting the notion that they need to change their diets for health reasons.² However, the MRCA study data also suggest that only a small segment of homemakers feel they can competently select diets appropriate to family members' needs and then make them eat it.

Results from these studies suggest that consumers tend to equate nutritional value with "naturalness" of a food. Concerns about "harmful" additives and "fattening foods" have led consumers to simplify their decisions by grouping foods as "good" or "bad." The guidelines for diet selection of those concerned about lowering caloric intake are based heavily on avoiding the foods they consider detrimental to health, with less attention being given to selecting the variety of foods that will promote optimum health. Even among people who express strong concern about nutrition, there is confusion about how to achieve a diet which provides adequate nutrients without excess calories, fat, cholesterol, sugar, and salt. The problem is compounded for people whose lifestyles encourage snacking. □

²Jones, Judith Lea. "Are Health Concerns Changing the American Diet?" *National Food Situation*, USDA, NFS-159, March 1977.

Net Weight Labeling Proposal

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Net weight labeling of meats and poultry has become a controversial consumer issue since it was formally proposed by the USDA's Food Safety and Quality Service (FSQS) in December 1977. The principle features of the proposal are:

- Free liquids, juices, fats, and solids absorbed by the packaging material would be excluded from a product's net weight. Net weight would equal drained weight.

- The current allowance for moisture loss due to evaporation would be eliminated. The average weight for products from the same lot would be required to equal or exceed the labeled net weight. Single packages, however, would be permitted actual weights below the labeled weight by a specified amount.

- Federal net weight standards would be established for bulk shipments or wholesale-sized packages.

- An FSQS approved net weight quality control program would be required at most federally inspected meat and poultry plants.

Consumer groups generally support the proposal. Since there is large variability in the amount of drained liquid within and between specific cuts of meat and poultry, consumer groups feel that the shopper is unable to make accurate value comparisons among products at the retail level.

State and local officials have two concerns with the issue. One problem deals with enforcement; the other is procedural. Since, under current regulations, allowances for moisture loss are not defined, many officials feel that enforcement of a net weight standard under current law is difficult. They cannot know whether a particular minus variation is due to evaporation or deliberate shortweighting. The proposed regulation would solve that problem. On the other hand, the

move to a drained weight definition of *net weight*¹ means more time spent on actual inspection procedures, since packages must be opened to determine the drained weight.

Producer groups generally oppose the proposed regulations. They argue that the price of their products will increase substantially to compensate for the amount of "overpack" necessary to meet the new requirements. They also feel that mandatory quality control will be costly to the consumer. Retailer groups oppose the new drained weight definition because it requires the opening of packages in the store during inspections by local officials. The cost of repacking the products could fall to the retailer as a business cost. Some industry people also fear a loss of sales as a result of the proposed change. Producers with a large amount of free liquid would appear more expensive since the reported price per pound would be increased.

Background

In 1973, a U.S. District Court in California ruled that States could not impose stricter inspection procedures on meat and poultry from Federally inspected plants than provided for in Federal regulations. The Wholesome Meat Act of 1967 and Wholesome Poultry Act of 1968 provides the USDA with the authority to regulate the net weight of shipments of meat and poultry products after they leave the plant and until sale to the ultimate consumer. Current regulations under those Acts require that the labeled

weight of meat or poultry products cannot be false or misleading and must express an accurate statement of the contents of the container exclusive of the packaging materials. Federal regulations also now provide for "reasonable variations" from that weight which may be the result of gain or loss of moisture which are unavoidable during food manufacturing procedures.

The authority to determine and enforce net weight compliance at warehouses and retail stores is given to individual State and local weights and measures officials. Some States and localities have more stringent net weight standards than the Federal regulations in that they do not allow for variations caused by moisture loss during distribution. After the California case, these standards became impossible to enforce. In 1977 the Supreme Court affirmed the California District Court's Ruling.

Following that affirmation, California filed a petition, signed by 47 other States, requesting that USDA change its net weight regulations. In response to that petition and to consumer complaints of excess fluid in packages, FSQS proposed the net weight labeling regulations for meat and poultry products in the *Federal Register* on December 2, 1977 (vol. 42, #232).

After the proposal appeared in the *Federal Register*, public comments were received. There was widespread disagreement concerning both the need for the proposal and its economic impact. The Consumer Federation of America² was awarded a contract to provide an analysis of the proposal. In addition, the House Committee on Agriculture requested that the General Accounting Office (GAO) evaluate the proposal and consider

¹There is the term used to refer to those parts of a product whose weight is not included in the labeled net weight. Dry tare is the weight of the dry packaging material before the product is packaged. Drained weight tare includes the used packaging material plus all absorbed as well as free liquid.

²Consumer Federation of America, "Analysis of Proposed Regulations on Net Weight Labeling," October 1978.



the feasibility of alternative systems. The December 1978 GAO report¹ recommended that USDA conduct additional analysis concerning the best way to monitor net weight labeling activities.

Following submission of that report, USDA's ESCS was asked to review the available evidence and provide its own assessment of the need for the proposal and the potential economic impact. In making its evaluation, ESCS took into consideration the two main objectives to be achieved by the proposal. First, to insure that the weight of usable meat and poultry purchased by consumers is at least equal to the weight stated on the package, and second, to enable States to enforce strict net weight standards at retail.

Study Results

The USDA study concludes that the proposal would succeed in achieving the objectives defined by FSQS. However, the study also concludes that the second objective could probably be accomplished as effectively under a system that allows free liquid as part of the product's net weight.

The study also concludes that the effects of the proposed rule change have been misunderstood by both consumers and producers. The amount of drained weight meat avail-

able for sale is constant regardless of the way in which tare is defined.

Consumers cannot expect the reported price per pound of product to remain unchanged if the drained weight rule results in the exclusion of free liquids from reported product weights. In the case of random weight products (such as whole chickens), the labeled price per pound would increase, but the labeled weight would decrease by an offsetting amount. The price consumers pay for usable product would remain unchanged. In the case of fixed weight products (such as bacon), some packers might have to increase the product to make weight at time of purchase equal the fixed weight on the label. The per-package cost to consumers would be higher. However, because consumers would be receiving more usable product, the real price per pound would remain unchanged.

Contrary to contentions of many producers, actual producer costs are not increased because of the change in tare. For random weight packages, the weight and price per pound will simply be adjusted to remove the weight of the free liquid; processing costs per drained weight pound are unaffected. In the case of fixed weight packages, some processors will admittedly need to add more product to each package. But, because the amount of drained weight meat is not affected by a labeling rule, there will actually be fewer fixed weight packages processed. Again, processing costs per drained weight pound are unaffected.

Drained Weight

The main benefit of a drained weight system would be to increase the accuracy of the information available in the marketplace for all meat and poultry products. Consumers would be better able to make per pound price comparisons. And producers would not be competitively disadvantaged by

those who use techniques that result in a higher proportion of free liquid to usable product. Producers of products that have relatively less free liquid would no longer be placed at a competitive disadvantage by net weight rules which now allow counting drained liquids as part of the product's weight. Finally, the buyers of bulk packed products will have a clearer standard for checking weights of the shipments they receive.

Predicting the net effect on total consumer expenditures for meat and poultry products is complicated since consumer responses to the change in product information provided by net weight labeling are uncertain. If consumers have been appropriately discounting the free liquid, there should be no net effect. However, if the reported price per pound under current net weight rules has been accepted as an accurate reflection of relative product value, consumers may shift to products that based on the labeled price per pound appear to become relatively less expensive as a result of the proposed change.

The quality control requirements of the proposal would increase industry costs \$59 to \$116 million, mostly due to the need to hire additional personnel. However, assuming that the largest potential cost of quality control would be passed on to consumers, the increase in price per pound would be less than one-half of 1 cent.

There may be additional costs to State and local governments for new equipment needed to enforce the new regulations and these costs most likely would have to be absorbed in current budgets. Also, there would be additional costs to retailers who would have to repackaging packages opened during inspection.

¹General Accounting Office, "Proposed Changes in Meat and Poultry Net Weight Labeling Regulations Based on Insoluble Data," CED-79-28, December 20, 1978.

Single copies of the final report can be obtained by writing the authors at, Food Economics, ESCS/NEH, 340 12th Street, S.W., Washington, D.C. 20340.

Demographics and Food Consumption

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The steadily declining birth rate since 1950 has decreased average household size and the number of pre-teenage children. But the number of teenagers, young adults, and senior citizens has sharply increased. Other demographic shifts since 1950 include a decline in the proportion of the population living in rural areas, the Northeast, and North Central regions, and an increase in the proportion of the population consisting of nonwhite persons.

The effects of these demographic changes on per capita food consumption were studied using data from the 1965-66 USDA Food Consumption Survey, the most recent available. These data were combined with Bureau of Census data on population characteristics. The time frame is 1950-80, with projections to 1990.

Age-Sex Composition

The U.S. population increased about 18 percent between 1950 and 1960. During this period, the proportion of children increased considerably with the post-World War II baby boom. The number of senior citizens also increased faster than total population. These changes depressed per

capita consumption of all foods except milk, cereal products, fruits, and sugar and sweets.

The birth rate slowed during the 1960's and 1970's, reducing the number of pre-teenage children. But the maturing of post-World War II babies increased the number of teenagers and young adults. The number of senior citizens continued to increase faster than the total population.

Holding all other factors constant, these changes in the age-sex composition produced a 3.7-percent decline in per capita milk consumption between 1960 and 1975.¹ Per capita cereal product consumption also declined slightly in response to changes in age-sex composition from 1960-75. Changes in the age-sex composition had a positive impact on per capita consumption of cheese, beef, pork,

vegetables, and coffee and tea, resulting in an increase of between 3 and 4 percent. Per capita soft drink consumption increased about 7 percent.

A continued large increase in the adult population could contribute to a rather large reduction in per capita milk (2.5 percent) and soft drink consumption (2.2 percent). Projected changes in age-sex composition between 1980 and 1990 would, however, seem to have a small positive impact on per capita consumption of cheese, poultry, and eggs. The per capita consumption of coffee and tea is projected to increase 7.1 percent.

Household Size

Although household size remained relatively unchanged between 1950 and 1960—declining from 3.37 to 3.33 persons—it dropped dramatically after 1960, reflecting the decline in the birth rate and an increase in the number of one-person households. Average household size fell to 2.9 persons in 1976. Based upon recent trends and Bureau of the Census projections, average household size will decline to about 2.8 persons in 1980 and 2.6 persons in 1990.

¹For time periods in which 1950 is not the base year, the percentage change differs from those given in the tables in account for changes in actual per capita consumption occurring between 1950 and the new base year.

Percent Change of Population in Various Age Categories, 1950-1990

Year interval	Total all ages	Under 5 years	5 to 9 years	10 to 14 years	15 to 19 years	20 to 39 years	40 to 59 years	60 years and over
1950-1965 . . .	9.1	13.1	25.2	21.8	3.4	-0.8	8.3	16.6
1965-1970 . . .	8.0	8.6	12.3	36.1	21.8	-0.5	8.0	11.8
1970-1975 . . .	7.5	-2.5	0.3	12.5	26.7	3.8	7.5	9.2
1975-1980* . . .	5.4	-13.5	-2.4	9.4	13.4	11.2	3.8	10.8
1970-1978 . . .	4.2	-7.4	-12.8	-2.0	8.8	15.2	0.4	10.1
1975-1980* . . .	4.0	0.9	-7.1	-12.8	-0.6	16.1	0.8	9.7
1980-1985* . . .	4.8	17.4	1.0	-8.9	-12.6	8.2	4.1	8.2
1985-1990* . . .	4.6	3.4	17.1	4.6	-9.8	1.0	11.3	6.0

*Series H, U.S. Bureau of the Census.

As household size declines, per capita income increases, which could increase individual food intake. The decline in household size during the 1960's and 1970's has had a positive impact on per capita consumption of all food groups except cereal and bakery products, fats and oils, and coffee and tea. The food group most

negatively affected by the decline in household size was fats and oils with a 2.4-percent reduction in per capita consumption. Per capita consumption of cheese, beef, fish, fruits, and soft drinks was estimated to have increased 6.2, 3.7, 8.1, 4.2, and 2.4 percent, respectively, as household size declined between 1950-80.

The projected decline in household size from 2.8 to 2.6 persons between 1980 and 1990 will result in less than a 1-percent change in per capita consumption of most foods. However, the decline could increase per capita consumption of cheese and fruits about 2 percent and fish about 4 percent.

Changes in Consumption Due to Racial Mix, Region, and Urbanization Population Shifts

Demographic Factor	Milk	Cheese	Beef	Pork	Poultry	Fish	Eggs	Fats, oils	Bakery products	Cereal products	Fruits	Vegetables
(1980=100)												
Racial mix												
1980	99.6	99.6	99.8	100.2	100.6	100.2	100.2	99.8	99.6	100.0	100.0	99.8
1970	99.6	99.1	99.7	100.3	101.8	100.7	100.4	99.4	99.6	102.0	102.1	99.7
1960	99.3	98.4	99.4	100.7	102.6	101.2	100.7	99.3	99.3	103.6	100.2	99.5
1950	99.1	97.7	99.2	101.0	103.6	101.8	101.0	99.1	99.0	106.0	100.4	99.3
Region												
1980	100.4	101.1	99.8	99.1	100.4	99.4	100.2	100.8	100.0	100.0	100.0	100.2
1970	100.7	101.6	99.7	98.4	100.7	99.9	100.5	101.2	100.0	100.0	100.0	100.4
1960	100.3	101.6	99.8	97.6	101.8	99.6	101.1	101.4	100.1	100.0	99.8	100.4
1950	100.0	101.4	99.8	97.1	102.0	98.2	101.6	101.6	100.2	100.1	99.6	100.3
Urbanization												
1980	99.2	99.0	101.8	99.3	100.4	97.6	100.6	98.3	98.6	97.6	99.4	99.6
1970	99.0	98.3	101.2	99.6	100.7	96.7	100.5	97.6	99.3	97.0	99.1	98.2
1960	98.9	98.3	101.6	99.6	100.6	96.6	100.7	97.6	98.3	98.6	99.0	98.0
1950	98.7	98.3	101.3	99.1	100.3	96.7	100.8	97.4	98.4	98.3	99.9	97.8

Age-Sex Composition and Household Size Effects on Consumption

Age-Sex Composition	(1960=100)											
1985	101.6	98.9	97.6	98.4	99.0	98.8	99.0	99.3	99.3	100.8	100.2	99.9
1980	103.1	99.2	98.1	97.6	99.6	98.1	98.2	99.1	98.1	101.4	100.6	98.4
1968	103.4	98.3	98.4	97.8	99.8	98.7	97.9	96.7	99.9	101.6	101.3	98.9
1970	102.0	99.6	98.2	99.3	100.6	100.4	98.4	100.0	101.0	101.4	101.8	100.2
1976	99.6	101.7	100.4	100.7	101.2	101.1	99.8	101.7	101.9	101.3	101.3	101.3
1960	98.9	103.6	101.6	101.6	101.7	101.1	100.6	101.7	102.0	100.7	101.4	101.7
1955	98.6	103.9	101.7	101.1	101.0	100.9	101.0	101.0	101.2	100.6	100.8	101.4
1950	94.8	104.2	101.0	100.6	102.6	101.0	101.1	100.9	100.9	100.2	100.6	101.1
Household size												
1980	100.1	100.4	100.3	100.0	100.1	100.8	100.0	99.9	99.9	99.8	100.3	100.0
1970	100.4	102.3	101.5	100.2	100.8	103.0	100.2	99.1	99.8	99.1	101.7	100.2
1960	101.1	106.2	100.7	100.6	101.6	108.1	100.6	97.8	99.1	97.9	104.2	100.6
1950	101.8	106.8	104.1	100.7	102.0	111.6	100.7	96.6	98.8	97.1	106.7	100.7

Racial Mix

In 1950, Whites comprised 89.5 percent of the population, Blacks 10.0 percent, and other races 0.5 percent. Today, Whites make up about 86 percent, Blacks 12 percent, and other races 2 percent. These trends are expected to continue into the next decade. The Bureau of the Census

projects that Whites will comprise 85.1 percent, Blacks 12.2 percent, and other races 2.7 percent of the population in 1990.

Changes in the racial mix between 1950-80 have had a negative impact on per capita consumption of milk, cheese, beef, fats and oils, bakery products, vegetables, sugar and sweets, coffee and tea, and total food. The largest negative impact was estimated for cheese, a 1.6-percent decline. For the remaining foods negatively affected, changes in the racial mix resulted in less than a 1-percent decline in per capita consumption since 1950.

However, changes in the racial mix have had a positive impact on per capita consumption of pork, poultry, fish, eggs, cereal products, fruits, and soft drinks. Per capita consumption of poultry and cereal products were estimated to have increased 2.5 and 3.5 percent, respectively, between 1950-80, as a result of changes in the racial mix.

Between 1980 and 1990, the projected changes in the racial mix would not appear to influence the per capita consumption of most foods by more than 0.4 percent. Food groups for which greater impacts are estimated include coffee and tea (0.7-percent decline), poultry (0.5-percent increase), and cereal products (1.2-percent increase).

Regional Shifts

The number of persons residing in the Northeastern and North Central regions declined 13.5 and 10.2 percent, respectively, since 1950, while the percentage of the population residing in the South remained relatively unchanged. However, the Bureau of the Census estimates the proportion of the population living in the South will have increased about 6.5 percent between 1970 and 1980. Since 1950, a major increase has occurred

in the proportion of the population living in the West, rising from 13.4 percent of the total population in 1950 to an estimated 18.2 percent by 1980.

These regional population shifts are estimated to result in less than a 1.0-percent change in per capita consumption of all foods except cheese, poultry, pork, fish, eggs, and fats and oils between 1950-80. Regional shifts occurring between 1950-80 will cause about a 1.5-percent increase in per capita consumption of cheese and poultry, a 1.1-percent increase in per capita egg consumption, and a 1.4-percent increase in per capita consumption of fats and oils. These population shifts resulted in a decline in per capita consumption of pork and fish of about 2.4 and 1.5 percent, respectively.

Bureau of the Census projections suggest that the proportion of the population living in the southern and western regions will increase 4.6 and 3.8 percent, respectively, between 1980 and 1990. The proportion of the population living in both the northeastern and north central regions is expected to continue to decline. These regional shifts will probably have little impact on per capita consumption of most foods. The largest positive impact is estimated for eggs, a 0.7-percent increase in per capita consumption, while per capita pork consumption is estimated to drop 0.6 percent.

Urbanization Shifts

In 1950, 64 percent of the population resided in urban areas, 21 percent in rural nonfarm areas, and 15 percent on farms. During the 1950's and 1960's, there was a population migration from rural to urban areas. By 1970, the proportion of the population living in urban locations stood at 73.5 percent, while the proportion of persons living on farms dropped to 5.2 percent.

Sugar, sweets	Coffee, tea	Soft drinks	Total food
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100.0	99.9	100.0	99.9
99.9	99.6	100.2	99.9
99.7	99.0	100.4	99.9
99.6	98.6	100.5	99.7

100.3	100.0	99.4	100.1
100.4	99.9	99.1	100.1
100.4	99.7	99.6	100.0
100.6	99.0	99.9	99.9

97.9	101.2	101.7	99.9
97.1	101.4	102.2	99.7
98.9	101.7	102.6	99.7
96.7	102.0	102.9	99.7

100.2	97.8	97.6	99.3
100.7	94.6	97.1	98.9
101.3	93.5	95.4	99.2
101.7	94.8	102.5	100.0
101.3	97.7	104.0	100.6
100.4	101.0	104.2	100.9
99.6	104.0	101.5	100.6
99.4	100.6	99.7	100.4

100.0	99.9	100.2	100.0
100.1	99.3	101.0	100.2
100.3	99.1	102.4	100.6
100.4	97.4	103.3	100.9

Alternative Menus for Schools

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Bureau of the Census data indicate that since 1970, although suburban populations grew, the proportion of the population living in urban locations has declined slightly, along with the proportion of the population living on farms. Based on these trends, the proportion of the population living in urban locations is expected to decline to 72.5 percent in 1980 and to 71.0 percent by 1990. The rural farm population is expected to decline to 3.7 percent of the population in 1980 and to 2.5 percent by 1990.

The urban-rural population shifts occurring between 1950-80 are estimated to have resulted in less than a 2-percent change in per capita consumption of all foods except fish, fats and oils, cereal products, sugar and sweets, and soft drinks. Per capita consumption of fish and cereal products declined 3.4 percent, while soft drink consumption increased 2.5 percent because of urban-rural population shifts.

Urban-rural shifts are expected to have only a very small impact on per capita consumption of all foods during the next decade.

The Next Decade

Changes in the population characteristics discussed are projected to have a cumulative negative impact on per capita consumption of milk, pork, fats and oils, vegetables, bakery products, sugar and sweeteners, and soft drinks in the next decade. Despite an expected increase in the number of children, per capita consumption of milk and soft drinks is expected to decline about 3 percent and 2 percent, respectively, as a result of projected demographic changes. For the next decade, demographically related changes are expected to result in a 1- to 3-percent increase in per capita consumption of cheese, poultry, fish, eggs, and fruits and a 5-percent increase in per capita consumption of coffee and tea. □

Meals served by the National School Lunch Program (NSLP) represent a significant percentage of all meals consumed away from home. Approximately half of all students in elementary and secondary schools receive a lunch at school through the NSLP, amounting to about 4.2 billion meals per year.

Type A Pattern

To achieve nutritionally balanced meals, school lunches offer foods as suggested by the basic four food groups. The official pattern is termed Type A.

Although the Type A meal pattern is well defined, such meals may take on a variety of forms. Many people think of the traditional hot lunch with meat, vegetable or fruit, bread, and milk as the only complete school lunch. However, in nearly all school lunch programs for secondary students, there are alternatives such as sandwich or "combo" meals consisting of foods commonly associated with fast food service, salad bars where the required meat, or meat alternative such as cheese, is part of a chef's salad, or a bag lunch which may be purchased and eaten away from the cafeteria.

Within each variant of meal type in secondary schools, there often are choices of menu items which increase acceptance among students, thereby reducing waste. As a result, students can select from a variety of foods meeting the pattern, avoiding those which they do not care to eat. To add further variety and acceptability, stu-

dents can often purchase nonreimbursable items such as snacks, ice cream, and desserts.

Meal Preparation

School lunch programs have been using alternative food preparation and service systems in an effort to reduce costs and better utilize expensive physical facilities. Across the Nation, at least four types of meal preparation and service are now being used. These four delivery systems were studied in 16 elementary schools during the 1975-76 school year. Systems studied were: onsite preparation and service; hot bulk delivery; chilled preportioned delivery; and frozen preportioned delivery.

The costs of these alternative meal preparation systems differed in their composition. Facility costs were lower for frozen preplated meals because they were prepared and supplied by an outside vendor and the school did not have to provide extensive kitchens. Labor costs were also lower for the two preportioned delivery systems since service and cleanup requirements were reduced.

The lowest total average meal costs occurred with the chilled preportioned delivery systems which used very large, automated central kitchens, greatly reducing unit labor costs. Well-managed, large-scale central preparation of meals offers cost advantages over other school food delivery systems.

Students preferred meals which were prepared and served onsite. Meals which were frozen and reheated before service were preferred least. Part of the difference stems from the positive effects of friendly and helpful food service workers. Also, the local preparation and service of food was associated with greater attention to individual preferences of students and providing a wider variety of meals.

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Alternate Menu Patterns¹

In an effort to reduce plate waste, the Type A pattern with the "offer-versus-serve" provision was recently amended for secondary students. Beginning in 1977, while senior high schools were required to offer meals meeting the Type A pattern, students had the option of not selecting two of the five required items offered. That is, meals with as few as three of the pattern's component parts would be classified as meeting the requirements for Government reimbursement of part or all the cost, depending upon the student's circumstances. More recently, this offer-versus-serve option has been extended to junior high students at the decision of the local districts.

The Type A pattern with the offer-

versus-serve provision was compared with the Type A pattern where students were required to take all components of the meal. Also tested was an alternative pattern based on the well-known four food groups. Lastly, a free-choice "a la carte" pattern was tested which allowed students to select any foods they wanted with the price of the meal being the sum of the prices of the individual items selected.

The only effect of the alternative patterns on meal cost was a reduction in labor costs per meal which occurred when the participation of students increased in schools serving free-choice meals. When the number of meals produced in a school increased, labor utilization improved.

Student Attitudes

Many habits and attitudes of students are well established by the time they reach high school. Social obligations, peer group recognition, outside stimuli, and individual self-esteem are all part of the environment which affects secondary students and their reactions toward school lunch programs. Many high schools are moving

toward open campuses where students have freedom to leave school during the day, allowing alternatives to the traditional school lunch. Such a situation provides some of the motivation to reexamine the NSLP with the idea of increasing its appeal to students, thus increasing participation.

In schools in this study where the lunchroom staff was friendly, a large variety of meal choices were offered, and the lunchroom atmosphere relaxed, the students tended to perceive the school lunch program more favorably. The majority of students felt that school lunches offered superior value for their lunch dollar than other alternatives.

Many students felt there was insufficient time to eat school lunch. The most positive attitudes on food, lunchroom environment, and time were given by students who ate school lunch three or more times per week.

Student reactions showed a preference toward a free choice of "a la carte" menu items with payment linked to those items actually selected. In this way, students felt that they

¹This study was carried out during the 1977-78 school year in 48 high schools. Each school served the Type A offer-versus-serve menu pattern for 4 weeks followed by one of the three alternate menu patterns for 6 weeks. Plate-waste data were collected for 19,000 students, while opinion data were collected from 9,600 students.

Meal Preparation, Delivery System, and Costs in the NSLP

System	Fees/Items	Cost per meal in dollars			Total	Characteristics
		Labor	Food	Misc.		
On-site preparation . . . and service	0.08	0.31	0.38	0.06	0.83	Prepared and served at a single site.
Hot bulk delivery	0.12	0.24	0.38	0.10	0.84	Prepared at central kitchen, delivered hot in bulk to satellite kitchen and served.
Chilled preportioned . . delivery	0.08	0.16	0.43	0.09	0.76	At satellite kitchen, portions may be heated before service.
Frozen preportioned . . delivery	0.04	0.14	0.80	0.09	0.87	At satellite kitchen, reheated and served.



The Emerging Food Policy Context

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had maximum flexibility in the lunches and were receiving the best value. Type A, or the four food group patterns, was least preferred because some students indicated they were required to select items which they did not like or did not intend to eat. The Type A pattern with the offer-versus-serve provision was rated intermediate between Type A and free choice.

Although students preferred free-choice menus, most lunchroom staffs had some difficulty coping with the increased traffic associated with this service. Many times their facilities and existing procedures were not geared to the increased participation and choices required. Free-choice service is more compatible with a sensible system of service where students queue up only to those serv-

ice areas where they wish to make choices. Also, the individual pricing of items created increased checkout problems for all students whether they were paying full price for the meal or were eligible to receive a free or reduced price meal. The automated cashier systems used in fast food operations would appear to be a practical solution to the problem.

The Future

School lunch plays an important part in the overall educational program at primary and secondary schools. Since student reaction to school lunch is more favorable when a variety of foods and choices are served in a less structured and more informal atmosphere, school lunch programs are moving in this direction. □

The 1970's will likely be regarded by future historians as a watershed decade for food and agricultural policy. The kaleidoscope of events, each with its own degree of lasting significance, has made this an exciting decade. The impacts of these individual events have converged to produce a context, or a new reality, within which food and agricultural policies will be shaped.

We came into the 1970's with the farm policies and programs from an era when farms were small and most farmers were poor. That world was characterized by low and often unstable commodity prices, little market power, capital shortages, and unfavorable credit terms.

Those farm programs formulated in the 1920's and 1930's and modified in the decades that followed were primarily designed to improve the lot of the farmer. Since prices appeared to be depressed from overproduction, the adequacy of food was not a major policy issue. Instead, commodity programs focused on raising and stabilizing prices through a combination of subsidies and production constraints. Crop insurance programs were designed to protect farmers from natural disasters. Research and extension programs focused on improving the lot of the farmer through improved technology and management. And credit policy focused on making it possible for farmers to own their own land and adopt the improved technology. An underlying assumption was that improving the well-being of farmers was the same as the public interest.

*The author is acting Director of the National Economics Division, ESCS, USDA. This paper is based on remarks made at the 10th annual meeting of the Southern Agricultural Economics Association. Views expressed are those of the author and do not necessarily reflect official positions of USDA or ESCS.

By the early 1970's, there was growing realization that the accumulated results and impacts of past policies had brought us to a world far different from that of the 1930's. There were fewer farmers. And many new actors were claiming a legitimate interest in the farm policy process. Some were even questioning whether the traditional beneficiaries of farm policies were still appropriate. Clearly farm policy was evolving in response to new perceptions of reality. But change was slow, and policies likely would have been only incrementally different by the 1980's had there not been the unusual convergence of events and developments during the decade now ending.

The Food Crisis of 1972-73

When we were in the midst of the food crisis, many felt we had turned the corner into a period of permanent scarcity and increasing real food costs. Those were the days of the Rome World Food Conference, the Kansas City Food Conference, export embargoes, the call for all-out production, the plowing up of marginal lands, "pasture fed" beef in the grocery stores, outrage at the "wasteful" practices of using grain to fatten beef, and so on. The food crisis was an important event.

But by 1976, set-aside programs were once again in effect, grain prices were depressed, and in 1977 farmers were marching on Washington. These developments supported the view that the food crisis was an aberration from the norm, a random occurrence off the trend lines. Things were "back to normal."

That, of course, was too simple a view. The food crisis "shocked" the system and the system will never return to old equilibriums. New institutions were in place. A managed grain reserve with rational operating rules had been developed. Export monitoring systems were set and a trade

agreement with the USSR had been signed.

Unfortunately, the main story is not that we became lastingly aware of the thin margin between plenty and scarcity. While 3 years of good crops at home and around the world lulled us into complacency, the underlying potential for a world food crisis of disastrous proportions continues to increase. The rest of the world grows daily more dependent on the United States to provide its food needs. Thus, the world food crisis, while not signaling a new era of permanent scarcity, has had lasting, if yet unclear, impacts.

The Energy Crisis

The energy crisis is also a major development and one of lasting significance. It is not likely that we will run out of petroleum soon. We won't. Major new discoveries in Mexico suggest there is enough oil for several more decades. That is not the point. What is significant is that world supplies are very limited relative to the growing demand and that while new discoveries will postpone the inevitable, the end of the petroleum age is inevitable. Moreover, the realization by oil-rich countries that they have a scarce resource means they can dictate the terms of trade.

Societies such as ours, which find themselves addicted to high levels of petroleum energy consumption, now realize they have a very expensive habit. We have not yet demonstrated that we have the collective will for gradual withdrawal so we face the possibility of going "cold turkey" someday. Meanwhile, the cost of oil imports is adding to our trade deficit and increasing the significance of agricultural exports. Maintaining these export levels has to be a higher priority than would be the case with low imports and no trade deficits. This fact alone conditions what we will be able to do in the area of farm and food policy.

Inflation

Inflation could be the most dangerous development of the decade. The impacts are pervasive and not always immediately clear. The significance for agriculture runs in two directions: the impacts of inflation on agriculture; and the impacts of agricultural and food developments on inflation in the general economy.

Inflation in the general economy increases the cost of things farmers buy and reduces the purchasing power of net farm income. The question of whether farmers gain or lose in the long run depends on the relative demand elasticities of what farmers buy and sell. Of particular significance is the impact of inflation on landownership patterns.

Inflation in the food system exacerbates the problem of inflation in the general economy. Food prices have risen more rapidly than the overall Consumer Price Index in recent years and thus have been a direct contributor to inflation. More important, food is a "bottleneck" item that is highly visible and affects the inflation psychology of the Nation. Many wage contracts have built-in cost-of-living escalators, and food is an important component of the cost-of-living index.

Changing Structure

While we were preoccupied with world food and energy crises, agriculture continued to change. Nothing revolutionary, but when supply and demand were back in balance and we turned once again to matters other than how to increase production, we began to realize that the gradual but persistent year-to-year structural changes had added up to an agriculture quite different from even 10 years ago.

It is significant that in the late 1970's we began to be conscious that the farm sector was no longer characterized by large numbers of modest-size farms. We began to appreciate what

had happened. By 1977, only 50,000 farms produced over one-third of the value of all production. And the largest 200,000 farms produced nearly two-thirds of all production. The top 1 million farms accounted for over 93 percent of all farm receipts. Thus, the remaining 1.7 million farms accounted for less than 7 percent of all receipts.

Structural changes have not been limited to the farm-production sector. Increasing concentration of power in farm input industries and in food processing and distribution sectors have permitted increased efficiencies and economies of scale while raising concerns that the exercise of such power may not always be consistent with the public interest. In the 1970's we also became more aware that structural changes in the farm sector and in the rest of the food system were not independent. We also began to realize that public policies impact on food industry structure in ways neither intended nor fully understood.

An Awareness of Limits

There are other candidates for the list of significant developments of the 1970's. The diminished dominance of the dollar and the increased interdependence of all world markets are examples. Some have even suggested that the turnaround in real growth of research funding is one of the most significant and threatening developments. But it may reflect the dawning realization that as a society we can't have everything, that we have to make some choices.

In fact, if one generalization encompasses all the above points, it is that the 1970's was the decade of the "sobering of America." It was in this decade that we finally accepted that our frontiers were gone, our resources were limited, that there were limits to the abuse we could inflict on our environment without serious consequences, that not all our problems could be solved with bigger programs

and bigger budgets, and that maximizing the near-term well-being of all the various special interests did not necessarily add up to maximizing the public interest. This unsettling but sobering confrontation with reality may come to be regarded by future historians as the single most important development of the 1970's, and will certainly condition the environment for agricultural policies and programs in the 1980's.

The Emerging Food Policy Context

All of the events and developments of the 1970's bring us to the threshold of the 1980's with an economic and policy environment characterized by:

- a growing awareness that the structure and organization of the farm and food sectors have undergone fundamental changes, and that these changes bring into question the appropriateness of policies designed for an earlier reality;

- an increased consciousness of the interrelatedness of individual policies and their cumulative impacts, and an awareness that policies and programs have unintended side effects;

- increased sensitivity to the claims of diverse interests that they have a legitimate stake in food policy and in the structure and performance of the food system.

In this environment the expectations for food policy have been broadened from traditional farm and commodity price objectives to a set of societal objectives folded into what is now called "food and agricultural" policy. The change is more than cosmetic.

Increasingly, food and agricultural policy is defined to include all those policies and programs which provide the economic and institutional framework within which the food and fiber industry serves the public interest. It is broader than traditional farm commodity policy. Food and agricultural policy starts with the premise that a

basic purpose of the food system is to provide for the nutritional well-being of the population. This means assuring adequate supplies of safe, wholesome food at prices that are affordable to consumers and yet provide a fair return to all necessary participants in the production and distribution process. Other objectives include an industry structure which promotes efficiency and innovation and which provides an equitable distribution of economic power and benefits. Also included are policies for use of land and water resources, protection and enhancement of the environment, and improving the quality of life in rural communities.

Clearly, there are times when these goals are in conflict and tradeoffs are required. Herein lies the case for a comprehensive food policy. By treating the many individual goals within one policy package, the conflicts and inconsistencies can be minimized and better aspects maximized.

Development of legislation in 1980 to replace the expiring Food and Agricultural Act of 1977 will provide an early indication of the likely direction of food policy in the coming decade. Already there are signs of widespread awareness of the new realities which provide the context for an emerging food policy. Issues now being debated within the general context of future food and agricultural policy include structure of the farm sector, structure and performance of the food distribution system, dietary goals, food safety regulations, consumer information and labeling, food distribution programs, nutrition research, grain reserves, distribution of farm program payments, and land and water policies.

The complexity of these issues and thus of food policy attest to the significance of developments in the 1970's and provides the context for the emergence of a more comprehensive concept of food policy in the 1980's. □

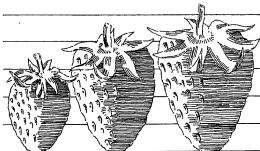
Food Prices, Price Spreads, and Inflation

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President Carter held a meeting with representatives of the food marketing industry in August 1979. The discussion was on food prices, the farm-to-retail price spread, and inflation. The meeting was precipitated by a concern that although retail food price increases had moderated during June, the gross return to firms marketing foods had continued to increase at a rate much faster than food marketing costs. According to data from USDA, the farm-to-retail price spread (retail value minus farm value) had increased at a 22-percent annual rate during the first half of 1979. But food marketing costs, including labor, energy, and fuel, had increased at an 11- to 13-percent annual rate, about the rate of inflation.

The Council on Wage and Price Stability (CWPS), in announcing the anti-inflation program in October 1978, noted that while little could be done to "control" the movement of prices at the farm level, food prices would be monitored by USDA and CWPS to be sure that changes in farm level prices were accurately and quickly passed on to consumers. This activity was to be pursued whether or not firms in the food business were in compliance with the CWPS standards.

Following the August meeting a controversy developed over the technical aspects of the Administration's central point. Food industry representatives argued that the Government data were "wrong" and that margins had not increased to any degree. Government sources continued to state that the marketing spread was wider than justified. How then are these seemingly divergent views resolved? A key point is in the use of



the terminology—margins versus spreads—and what these terms mean.

costs of marketing food and include profits to firms at all levels.

What Is a Price Spread?

The farm-to-retail price spreads calculated by USDA represent the difference between the retail cost of a food (or set of foods) and their value at the farm level. A summary price spread is calculated for a market basket of all foods. The current market basket contains average quantities of domestic farm foods purchased by urban households. USDA uses data from the Bureau of Labor Statistics (BLS) of the Department of Labor to establish the relative importance of each food in the consumer's food bill. Retail price data are also obtained monthly from BLS to develop the retail cost of the market basket.

The farm value of the foods in the market basket is determined using the USDA Prices Received by Farmers, other public reported prices, and the farm product equivalent of the foods in the market basket. The value of byproducts (cattle hides, for example) is subtracted to obtain the farm value of the foods sold at retail.

Thus, the farm-to-retail spread is a measure of the gross return to all firms processing, transporting, and marketing U.S. farm foods. The dollars generated are used to pay for the

Margins Something Different

The marketing margin, a commonly used industry measure, is typically reported as a percentage. Industry sources refer to the gross margin as "the proportion of the actual revenue from selling groups of foods which is left after deducting the cost of the merchandise sold." Since farm food costs account for about 40 percent of the at-home consumer food bill, the gross marketing margin is about 60 percent. Firms use the dollars generated by the gross margin to pay operating costs. What is left over is profit.

The Administration price guidelines for food retailers are specified in terms of the percent gross margin—not in terms of the price spread. Furthermore, the guidelines are for firms. And, since most food firms sell non-food items, all firms could be in compliance with the guidelines and there still could be a situation where changes in farm level prices were not "accurately and quickly" being passed on to consumers.

Even more to the point, it is possible for the percentage gross margin to remain constant (the industry claims) and still have the price spread increasing at a rate faster than market-

¹Prices at the farm level typically change in response to the relative availability of products. Individual farmers have little control over the prices they receive for their output.

ing costs (the Administration claims). Consider the following example:

Marketing Margin Relationship

	Period 1	Period 2	Percent Change
Farm Value ..	\$100	\$130	30
Price			
Speed ..	200	260	30
Retail Value ..	300	390	30
Marketing Margin (%)	67	67	0

While the percentage marketing margin remained unchanged, the price spread increased 30 percent. In this case food marketing firms received \$60 more in Period 2 for performing the same functions. If it were the case that inflation in marketing costs would be 15 percent, the increase in the spread was more than sufficient to cover the increase in costs.

Spreads in 1979

For the first 6 months of 1979, the farm-to-retail price spread for a market basket of domestically produced foods increased at a 22-percent annual rate—much faster than the 13 percent seasonally adjusted rate of inflation in the general economy.

Increases in spreads varied widely by major product group. Spreads increased for:

- red meats at a 63-percent annual rate;
- fresh fruits at an 80-percent annual rate.
- dairy products at a 12-percent annual rate.
- cereal and bakery products at a 5-percent annual rate.

Retail prices for beef and pork did not drop as fast as cattle and hog prices during the second quarter.

Their price spreads at mid-year were much larger than appear warranted, based on costs.

Livestock price spreads usually decrease when livestock prices increase. However, during the latter part of 1978 and in early 1979, the price spreads increased while prices for cattle were increasing.

These marketing spread data indicate that firms in the food industry may have followed an atypical pricing practice during the first half of 1979. They increased the spread when the raw product price moved up, thus maintaining a constant percentage gross margin, but retail prices did not decrease to an appropriate degree when farm food costs began to decline.

Marketing Costs Also Higher

Prices of the inputs used by firms processing and marketing foods have increased—at an 11- to 13-percent annual rate in the first half of 1979. While significant, these cost increases do not appear consistent with the 22-percent rate of increase in the price spread.

Containers and packaging materials increased at a 13-percent annual rate. For example, the plastic wrap used to package fresh produce and meat rose at a 32-percent rate.

Labor costs during the first half of 1979 increased at an 8.4-percent rate. But, recent labor contract settlements are expected to push labor costs higher for the rest of the year.

Fuel and power prices rose at a dramatic 30-percent annual rate. Residual fuel oil, natural gas, and electricity prices rose at annual rates of 64, 28, and 16 percent, respectively.

The combined effect of fuel price increases and spot shortages of fuel recently caused transportation costs to rise more than the fuel cost increases suggest. The fuel situation prompted the independent truckers' strike, reducing the number of trucks available

for hauling perishable farm products during June and causing some spot shortages of meats and produce.

Hauling rates have since increased dramatically, varying by geographic area. For example, the truckload rate for moving produce from southern California to New York increased from about \$2,500 in January 1979 to \$4,000 in August.

Price Spreads and Profits

Increases in the farm-to-retail price spread do not necessarily imply that food marketing firms are making higher profits. Such increases simply mean that the firms in the industry are collectively setting more income to pay the costs of performing the marketing function. And when costs increase faster than income, food firms (like people) end up worse off. But when incomes increase faster than costs, wealth positions improve.

The USDA market basket price spreads data, by themselves, do not allow conclusions about industry profitability. Nor do they allow conclusions about the income position of any particular firm or set of firms. But, with a knowledge of the changing costs of marketing food they do allow for an assessment of industry price performance. Specifically, the data can be used to assess whether and how fast changes in farm level prices are being passed on to consumers.

And while the gross percentage margin did not change dramatically during the first half of 1979, the farm-to-retail price spread did increase about twice as fast as food marketing costs. How all this actually translated into industry profitability during the first half will not be known until food industry profits data for the first and second quarters are made available to the public. Preliminary data, however, suggest that food retailers did improve their relative financial positions during the first half. □

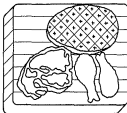
1979 Consumer Meat Expenditures

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The average retail price for red meat has risen over 250 percent since 1950. Per capita consumption during the period has increased 18 percent, to an estimated 148.5 pounds in 1979. Despite these increases, however, consumers are devoting a smaller proportion of their per capita disposable income to red meat.

Consumers spent approximately \$80 per person for red meat in 1950, 5.9 percent of after-tax income. In contrast, forecasts for 1979 indicate that per person expenditures will exceed \$285, representing less than 4 percent of disposable income.

Per capita disposable income was \$1,355 in 1950. Disposable income in 1979 will average a forecasted \$7,320, 540 percent more than in 1950. Thus, while meat prices and consumption have increased rapidly over the last



three decades, incomes have risen faster. Consumers, therefore, have been able to purchase more red meat (even at the much higher prices) for a smaller share of their income.

Americans are not only eating more meat than they did in 1950, they are eating different kinds of meat. In 1950, poultry comprised 17 percent of all meat consumed. That share will

increase to almost 29 percent in 1979. Similarly, beef consumption now represents approximately 40 percent of the total quantity of meat consumed, up from 33 percent in 1950.

Despite little change in consumption over the past 30 years, pork's share of meat consumption has fallen from 42 to 31 percent.

Beef Expenditures

While the percent of income devoted to total red meat has declined, the share spent on beef has remained relatively constant. Per capita expenditures for beef in 1950 were \$38, 2.8 percent of the average consumer's income. In 1979, that share will be about 2.5 percent, or \$83 per person. This relative stability may be attributed to a 190-percent increase in retail beef prices over the past 30 years and a relative increase in the consumption of beef. Between 1950 and 1979, beef consumption rose 65 percent from 50.1 pounds per person to an estimated 82.7 pounds per person.

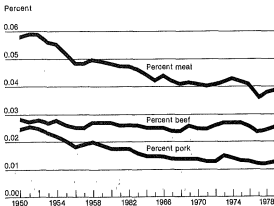
Pork Expenditures

Despite a 181-percent increase in pork prices and a small increase in consumption, there has been a decline in the percent of income spent for pork, from 2.5 percent in 1950 to 1.3 percent in 1979. Again, this decline is attributed primarily to higher consumer incomes.

Poultry Expenditures

Lower real prices and the increase in disposable incomes also have resulted in an increase in the per capita consumption of poultry. Poultry consumption per person was 24.7 pounds in 1950, versus an estimated 60.2 pounds in 1979, a 144-percent increase. Per person expenditures have increased from \$15.19 in 1950 to \$43.78 in 1979. The share of income devoted to poultry purchases has fallen from 1.1 percent in 1950 to 0.6 percent in 1979. □

Percent of Income Spent for Red Meat, Beef and Pork, 1950-1979





USDA Actions

Rules for Food Stamp Offices

USDA has proposed minimum standards for hours and locations of food stamp offices to provide better service to applicants and participants. The regulations call for offices certifying applicants for food stamps to be open for a minimum of either 30 hours per month or 35 hours per week, depending on the number of participants in the area. In areas with very small caseloads, agencies may use out-of-office certification procedures such as use of a traveling caseworker.

County and city offices that issue food stamps would be open at least 6 hours per week. Under the proposal, this requirement may be met by mailing stamps to participants.

In addition, USDA proposes that counties and cities provide both certification and issuance services within 30 miles of all, or nearly all, households receiving food stamps. Exceptions could be granted in areas where people routinely travel farther to shop for food.

Beyond the minimum standards for hours and locations, State agencies are allowed flexibility in applying the standards to local circumstances. The regulations permit local agencies to determine service needs and require public participation in the development of local service plans every 4 years.

Evaluating School Food

USDA is seeking proposals to evaluate the national school lunch and breakfast programs. The evaluation will be carried out in four phases. The first will review and synthesize data from existing school feeding programs to assess the program's nutritional impact on school children. The second will develop research designs to collect information. Phases three and four will implement the research efforts designed in phase two. The eval-

uation is expected to be completed in 2-1/2 years.

Potential contractors should contact the contracting officer, Administrative Services Division, Room 793 GH1, FNS, USDA, Washington, D.C. 20250.

World's Grain Import Needs

The heavy concentration of world grain stocks in the United States and grain handling problems in other major grain exporting countries make it likely that the United States will supply the greatest part of the prospective increase in the world's grain import needs in 1979/80. However, the expected record-large 1979/80 export volume combined with possible fuel availability problems could generate transportation difficulties in the United States.

The tightening of the world grain situation has triggered opening of the United States farmer-owned grain reserve for wheat; about 1.5 million tons of the 10.7-million-ton total have been made available for domestic and export markets in the first 4 weeks of release.

These developments would appear to assure the achievement of the forecast increase of U.S. agricultural exports from \$27 to \$32 billion in fiscal year 1979. Agricultural imports are expected to reach \$16 billion, compared with \$13.9 billion in fiscal 1978, giving the United States a \$16-billion agricultural trade surplus.

USDA and Parent-Teacher Group

USDA allocated \$98,000 for a joint campaign with the National Congress of Parents and Teachers to improve and expand child nutrition programs in schools.

Under the agreement, 20 States, selected in September, will be awarded grants to develop projects in which parents, students, school officials, and food service employees can help up-

grade dining and kitchen facilities, establish sound nutrition education programs for students and cafeteria employees, and make other improvements in local school food service operations.

The State projects will run from October 1979 to February 1980. After the State projects have ended, a brochure will be sent to the 28,000 local chapters of the Congress of Parents and Teachers to encourage local adoption of similar projects. The Congress has 6.2 million members.

Tenderizing Old Birds

The USDA has proposed that meat processors be permitted to use tenderizers in all species of meat and mature poultry. Processors can now use the tenderizers only in beef.

The proposal authorizes meat processors to use tenderizers called proteolytic enzymes for pork, lamb, mutton, goat, and mature poultry meat.

Treated products would have to carry a statement, immediately after the product name, spelling out the exact nature of the treatment and the name of the enzyme. An example of such labeling might be: "Lamb Shanks—dipped in a solution of water, salt, flavorings, and papain."

Proteolytic enzymes currently are "generally recognized as safe" (GRAS) for use in human food by the Food and Drug Administration (FDA). FDA has proposed to affirm the GRAS status of one of these enzymes, papain, as a direct human food ingredient. In addition to papain, which comes from the papaya plant, proteolytic enzymes derived from other plant and mold sources include bromelain, ficin, *Aspergillus oryzae*, and the *Aspergillus Flavus oryzae* group.

Requests for authorization to use the tenderizers on products other than beef come from the pork and poultry industries. The industries submitted



data showing that the proteolytic enzymes would effectively tenderize meat from larger and older swine and from older birds. USDA established taste panels which confirmed that the tenderizers made meat from larger and older swine and from older birds more palatable.

Potassium Sorbate in Bacon Curing

Bacon cured with potassium sorbate and low levels of sodium nitrite provides protection against botulism and forms less nitrosamine when it is cooked, according to a study by USDA.

Studies by the department's Food Safety and Quality Service (FSQS) show that the potassium sorbate cure is equal to or more effective in protecting against botulism than the present sodium nitrite cure and that nitrosamine formation was lower, although the reduction was not as great as had been expected.

The study was conducted in conjunction with a May 16, 1978, proposal to permit curing bacon with 0.26 percent potassium sorbate and 40 parts per million (ppm) sodium nitrite. Present regulations allow 120 ppm nitrite and no potassium sorbate.

Test results were released July 20 by the department's Science and Education Administration (SEA) on the taste, appearance, and cooking characteristics of bacon cured three ways, including the sorbate cure.

FSQS Administrator Donald L. Houston said a final decision of whether to permit potassium sorbate in bacon is waiting for the report of a task force from the department and the Food and Drug Administration about the cause of reactions, including slight swelling of the face and hands or mouth and throat irritations, that occurred among some of the people participating in the SEA tests. No bacon containing potassium sorbate is now in the food supply.

Both studies were done in a three-month period using bacon produced under commercial conditions at four plants. The bacon was prepared with three different cures: potassium sorbate and low sodium nitrite, currently used levels of sodium nitrite, and no preservatives.

Barge Inspection for Donated Commodities

Barges that carry donated nonfood dry milk or other processed agricultural commodities have to be USDA inspected before they are loaded, as of August 1.

Inspection of lish barges, seaboats, and other containers that carry agricultural commodities under Title II of the Public Law 480 (Food for Peace) program will help ensure these shipping facilities are clean, dry, free of insect infestation and odor, and are in condition to load and carry food.

The steamship companies will arrange for the department's Federal Grain Inspection Service or its agent to inspect the containers. The carriers will pay for the inspections.

"Structure of Agriculture" Dialogue

Public meetings will be held in November and December to obtain comments and suggestions on the economic and social issues affecting the structure of American agriculture and rural life.

Dates and cities are: Nov. 27—Montpelier, Vt.; Nov. 28—Fayetteville, N.C.; Nov. 29—Huntsville, Ala.; Dec. 4—Sioux City, Iowa; Dec. 5—Sedalia, Mo.; Dec. 6—Wichita Falls, Tex.; Dec. 11—Boulder, Colo.; Dec. 12—Spokane, Wash.; Dec. 13—Fresno, Calif.; Dec. 18—Lafayette, Ind.

The public meetings are part of the

"national dialogue on agricultural structure." Top USDA officials will attend each meeting.

The term "structure" is defined as issues on:

□ Number and sizes of farms and how they vary by region and type of operation.

□ Ownership and control of resources, including the form of business organization, its tenure, and its purchasing and marketing arrangements.

□ Degree of production specialization and how it affects managerial and technological requirements.

□ Barriers to entering and leaving farming.

The USDA is compiling a series of background issue papers with basic facts and statistics outlining the major questions involved in structure. These will be printed and distributed during September and October.

Anyone who wants to comment at any of the public meetings should sign up in advance. Those who cannot attend one of the meetings may send their suggestions to the project coordinator, Structure of Agriculture, USDA, Washington, D.C. 20250.

Quick Test for Antibiotic Residues

U.S. Department of Agriculture meat inspectors in 19 States will soon begin testing a new screening device that can tell, in a matter of hour rather than days, whether animal tissue contains antibiotic residues.

The device, called "STOP" for Swab Test on Premises, will be used to test cull dairy cows for antibiotic residues during the pilot program.

A major drawback to residue testing has been the 7 to 14 days required to obtain laboratory results.⁸⁷ However, indicates whether tissue contains antibiotic within about 18 hours, but carcasses would normally leave slaughterhouse.

Legislative Update

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Although most congressional activity so far this year has been focused on energy and arms limitations issues, work on a variety of bills affecting the food system continues.

Food Assistance

The Congress worked to "fine tune" some of the food assistance legislation during the latter part of the legislative term. Since major food assistance legislation was enacted in 1977 and 1978, action this year dealt with altering individual provisions. The House and Senate passed (and the President signed into law) a provision that raises the cap on food stamp expenditures for 1979 by \$620 million. Before the supplemental funds were authorized, USDA was preparing for an across-the-board cut in food stamp benefits in August and September. This would have been necessary since the available funds would not have been sufficient to provide the full benefits to participants through the end of the fiscal year.

This year's Food Stamp Program costs have exceeded the originally authorized appropriations for several years. One is the sharp increase in new applicants for the program that came at the beginning of the year. This increase primarily was due to the limitation of the purchase requirement for food stamps (see *National Food Review*, NPR-7, Summer 1979). Persons previously eligible for the program, but unable or unwilling to meet the purchase requirement, chose not to participate. Once this requirement was eliminated, USDA believes the net increase in participation to be in the range of 3.0 to 3.5 million persons. In addition, the new participants have been poorer than expected. This has resulted in the need for higher benefits than predicted, resulting in higher overall program costs.

The other major reason for the substantial increase was the rapid in-

crease in food prices experienced this year. Under the procedure set forth in the Food Stamp Act of 1977, food prices were expected to increase between 3 and 4 percent each year. But, since the 1977 bill's passage, food prices have increased 22 percent. This large discrepancy between the predicted food price increase and the actual increase, coupled with the significant growth in participants, higher unemployment rates, and lack of growth in personal income, pushed 1979 Food Stamp Program costs beyond this year's appropriations, resulting in the need for supplemental funding by \$620 million.

The recently passed legislation also removes the ceiling on the excess shelter expense deduction which can be claimed by participating households with elderly persons or persons receiving Supplemental Security Income benefits. Rules established under the 1977 Food Stamp Act caused hardships for some households, leading, in certain cases, to their having to choose between buying food and paying medical and shelter costs. The new legislation also provides for an excess medical expense deduction for these households.

Other provisions of the new legislation permit the Secretary of Agriculture to reduce the value of food stamp allotments on other than a prorata basis if such reductions become necessary due to lack of funds. Also, the Secretary now is required to report monthly on Food Stamp Program costs assessing the likelihood that the value of the allotments will have to be reduced.

Other food assistance legislation during this session includes the reporting to the House of a bill which would extend authorization for the Child Nutrition Act of 1966. Also, the Senate passed a bill reducing the authorization for the Special Supplemental Food Program for Women,

Infants and Children (WIC program) by \$50 million for fiscal year 1980.

Food Additives

Several issues dealing with food additives have been raised this session, although final action on many is still pending. The moratorium on the saccharin ban has been extended another 2 years. Saccharin is the only nonnutritive, noncaloric artificial sweetener approved for use in the United States today. At least 5 million pounds per year are used in foods—predominately in diet soft drinks.

On March 9, 1977 the Food and Drug Administration (FDA) announced its intent to ban saccharin since tests in Canada showed that saccharin, when fed in high doses to rats, caused malignant bladder tumors. The FDA's justification for this ban came under the general food safety laws and the Delaney clause, which prohibits the use in food of any ingredient shown to cause cancer in animals or man. However, late in 1977, Congress blocked the ban on saccharin for 18 months in order to allow sufficient time for the tests to be substantiated. During the moratorium, a warning label was required on all products containing saccharin. In addition, Congress requested the National Academy of Science (NAS) to conduct a study to examine all the potential risks and benefits to health of the use of saccharin.

The major conclusions of this NAS report were that saccharin is a carcinogen of low potency relative to other carcinogens; saccharin promotes the cancer-causing effects of some other carcinogenic compounds and must be viewed as a potential carcinogen in humans. Just how great a risk it poses cannot be precisely determined at this point.

As the 18-month moratorium on the saccharin ban approached expiration, numerous hearings were held on



whether the ban should be instituted.

The FDA promoted the ban while the diet food and soft drink industries and numerous consumer groups strongly opposed it. Those opposing the ban insisted that the availability of saccharin is imperative because of diabetes, obesity, and other health problems since no safe oncaloric substitute is currently available.

On June 26, 1979, the House Commerce Committee voted to keep saccharin legal for 2 more years, thereby extending the 1977 moratorium until June 30, 1981. This action bars the FDA from taking any action against saccharin before that date.

The question of banning or regulating another additive and possible carcinogen, sodium nitrite, is also of concern to many legislators. Sodium nitrite is currently used to preserve,

flavor, and color bacon, frankfurters, corned beef, and other processed meats. Several bills state that, until a satisfactory substitute for nitrites is found, the Secretary of Agriculture may not ban the use of nitrites as a food preservative solely on the basis of any possible carcinogenic effect.

The nitrite controversy has been underway for some time. Those opposed to the prohibition of nitrites—predominately the cured meat industry—argue that nitrites have immense value as a preservative which prevents botulism. In addition, they argue, prohibition of nitrite would hurt the Nation's struggle to conserve energy since it would necessitate an expansion of refrigeration capacity in order to protect meats against disease. Opponents of the ban also question the validity of the scientific tests

which lead to the conclusion that nitrites may be a potential carcinogen.

Consumer groups, which advocate the banning of nitrite in foods, cite the extremely rare occurrence of botulism fatalities. They argue that methods to keep meat free of botulism without nitrite exist, and they foresee the development of a nitrite replacement, shortly. Many believe the cured meat industry is fighting to keep nitrites purely for their cosmetic value (they add color and taste to meats) rather than for their value as a preservative.

Despite the current debate on the subject, it seems likely that the additive will remain in foods for several years. The FDA and USDA favor a gradual step-by-step phasing out of nitrites in certain products, but the timing of this action may depend on how soon a nitrite substitute for preventing botulism can be developed.

Other Legislation

Other actions this session on food policy bills include:

□ House Committee approval of the Meat Import Act of 1979, which modifies the method by which quotas are established for the importation of certain specified meat products. This bill proposes to limit the maximum aggregate quantity of specified types of meat which may be utilized for consumption in any 1 year in the United States.

□ A House Committee recommendation to implement the International Sugar Agreement. The stated goal of this proposal is to protect the welfare of consumers of sugar and of those engaged in the domestic sugar-producing industry.

□ Debate in both the House and the Senate on the Federal Crop Insurance Program. Proposed legislation would expand and improve the existing program. □

Publications

Publications noted in this section may be obtained by contacting the sources listed. For ESCS-USDA publications call (202) 447-7255 or write to ESCS Publications Unit, Rm. 0054, South Bldg., U.S. Dept. of Agriculture, Wash., D.C. 20250. (Note: A limited number of single copies of ESCS reports are available free of charge. Additional copies are obtainable at cost.)

Bibliography on the Economics of Fruit and Vegetable Production and Marketing, 1965-76, compiled by Joan Penrow, ESCS-50, USDA.

This bibliography lists research reports on the economics of fruit and vegetable production and marketing from January 1, 1965 to June 30, 1976. References have been compiled from several land-grant institutions and from **The National Bibliography of Agriculture**. An author index is included.

Food and Nutrition for the 1980's: Moving Ahead, USDA, April 1979.

This publication gives a comprehensive plan for implementing the National Food and Human Nutrition Research, and Education and Information Programs as outlined by USDA. Current nutrition research activities are discussed as well as future objectives for human nutrition research and education. For copies write: USDA, Human Nutrition Policy Coordinator, Office of the Secretary, Rm. 419-A, Administration Bldg., Wash., D.C. 20250.

Food Prices in Perspective, by Larry E. Saloth and William T. Boehm, ESCS, USDA Agri. Info. Bulletin 427, July 1979.

The authors examine why retail food prices in the U.S. rose an average of over 9 percent annually from 1973 to 1979. Substantially reducing

the upward movement in food prices will require the same long-term effort needed to reduce general inflation. In addition, actions to reduce the volatility in commodity prices and commodity trade flows also appear needed. An overview of the food delivery system is provided.

Changes in Food Expenditures by Income Group, by Anthony E. Gallo, William T. Boehm, and Corinne LaBovitz, ESCS-57, USDA.

Changes in food expenditures and income for family income groups over a 12-year period are examined in this report. The data are from Bureau of Labor Statistics Consumer Expenditure Surveys for 1960-61 and 1972-73. Family income rose at each income level studied. But, the percentage of family income spent for food by the lowest income group rose slightly while the proportion of income spent on food declined significantly for higher income groups.

Food Expenditure Patterns of Single-Person Households, by Benjamin H. Sexauer and Jennifer S. Mann, ESCS, USDA, AER-428.

The data in this study show that single-person households differ widely in their food purchases according to income, age, and sex. Men spend more on prepared foods (like frozen dinners) than women, and lower income young men spend more on prepared foods than any other of the 12 subgroups studied. The data also show that single-person households spend more on food per person than do multiperson households.

Social Welfare Implications of Federal Marketing Orders for Fruits and Vegetables, by Edward V. Jevseev, ESCS, USDA, Technical Bulletin 1608, July 1979.

Using linear demand and supply relationships, the author explores so-

cial welfare implications for producers and consumers of Federal marketing orders for fruit, vegetable, tree nut, and specialty crops.

Small-Farm Issues: Proceedings of the ESCS Small-Farm Workshop (May 1978), ESCS-60, USDA.

This publication includes background papers, panel discussions, and group session reports presented by workshop participants. The subject matter relates to perspectives, research needs, and problems of small farmers. The need for a new focus on the farm family, as a production, income earning, and social unit, is cited by participants.

Senior Citizens: Food Expenditure Patterns and Assistance, by Anthony E. Gallo, Larry E. Saloth, and William T. Boehm, ESCS, USDA, AER-426, June 1979.

The Older Americans Act of 1965, amended in 1972, states that many senior citizens eat inadequately because they lack financial means, knowledge, and mobility to purchase and prepare nourishing foods. This report examines how food purchasing patterns of senior citizens compare with those of other age groups.

Food Stamp Redemptions: Their Impact on Food Sales by Region, Size, and Kind of Participating Food Stores—Fiscal 1976, by Paul Nelson, ESCS, USDA, AER-410.

This report analyzes the amount of food sales, food stamp redemptions, and cash/check receipts for all retail food stores which participated in the Food Stamp Program in fiscal 1976, according to region, kind, and size of store. The impact of the national Food Stamp Program on retail food sales is examined for independent as well as chain stores, bakery and dairy outlets and other mobile stores, and miscellaneous food retail outlets.



Chronological Landmarks in American Agriculture, compiled by Maryanna S. Smith, ESCS, USDA, AIB-425.

This chronology lists major events in the history of U.S. agriculture and cites the reference sources used.

Potential Impacts of Reconstituted Milk on Regional Prices, Utilization, and Production, by Jerome W. Hammond, Boyd M. Buxton, and Cameron S. Thunen, Agriculture Experiment Station, Univ. of Minnesota in cooperation with ESCS-USDA, Bulletin No. 529.

This study analyzes the regional economic impact of permitting the use of reconstituted milk to meet shortages in the supply of fresh fluid milk. The authors examine factors which influence the acceptance and use of reconstituted milk, as well as Federal and State regulations regarding its use. For copies write: Bulletin Room, Coffey Hall, Univ. of Minnesota, St. Paul, Minn., 55108. Single copies free of charge.

Pricing Problems in the Food Industry (With Emphasis on Thin Markets), edited by Marvin L. Hayenga.

This publication consists of various papers presented at the Symposium on Pricing Problems in the Food Industry, March 2-3, 1978. Authors examine the following markets with respect to the pricing issue: egg and broiler; butter and cheese; livestock and meat; and fruit and vegetables. Policy issues and alternatives in well as research priorities are also addressed. For copies write to: NC-117, 905 University Ave., Rm. 209, Madison, Wis. 53706. Free.

Your Money's Worth in Foods, by Betty Peterkin and Cynthia C. Junker, Consumer and Food Economics Institute, Human Nutrition Center, SEA, USDA, Home and Garden Bulletin-183.

This revised report provides information on meal planning and food shopping for economy-conscious consumers. It includes data on retail prices of meat products and fruits, and provides helpful suggestions on how to shop for these and other food products. Available from USDA, Office of Governmental and Public Affairs, Wash., D.C. 20250.

The Impact of Firm Conglomeration on Market Structure: Evidence for the U.S. Food Retailing Industry, by Ronald W. Cotterile and Willard F. Mueller, College of Agriculture and Life Sciences, Univ. of Wisconsin and North Central Regional Project NC-117, Organization and Control of the U.S. Food System, May 1979.

This study examines the impact of conglomerate power on market structure in grocery retailing. The authors treat such questions as: Will the market concentration trend be halted if only significant horizontal mergers are prevented? Does de novo entry by large chains erode market concentration?, etc. For copies write to: Dr. Willard Mueller, 1450 Linden Dr., 350 Agriculture Hall, Univ. of Wisconsin, Madison, WI. 53706. Free.

New Directions in Farm, Land and Food Policies: A Time for State and Local Action, Agriculture Project, Conference on Alternative State and Local Policies, 1901 Q Street, N.W., Wash., D.C. 20009, (202) 234-9382.

This publication has been written and edited to assist the new movement of citizen activists who are concerned about issues relevant in farm, lunch and food policies. Such concerns include the rapid decline in the number of farmers in this country, increasing corporate control of food production and distribution, agricultural land losses, etc.

Each chapter of this book includes a narrative outlining new approaches and policy alternatives being proposed

and implemented in States, counties, and cities across the country. Also included in each chapter is a reference bibliography and a listing of key organizations to contact on particular issues discussed. A resource and contact section is an additional reference source located at the end of the book. Available from Agriculture Project at the above address. Price: \$9.95 per copy for individuals, \$14.95 per copy for institutions.

Community Gardening: A Handbook, Brooklyn Botanic Garden Record, Plants and Gardens.

This publication, by the Brooklyn Botanic Garden, is devoted to new interest in horticulture, especially in inner city communities. In this handbook, the editors have carefully selected a number of community gardening programs around the country for commentary by people who have played a major role in their development. In addition to these articles is a section which cover questions and answers about community gardens; results of government surveys on gardening; tips on urban gardening and more. Copies of this publication are available from Brooklyn Botanic Garden, 1000 Washington Ave., Brooklyn, N.Y. 11225. Price: \$1.75 per copy.

U.S. Food Expenditures, 1954-78: New Measures at Point of Sale and by Type of Purchaser, by Alden C. Manchester and Richard A. King, ESCS, USDA, AER-431.

This report presents the total expenditures series—a new, comprehensive series used to estimate food expenditures. It reports total U.S. food sales by all retailers of food consumed both on- and off-premises. The series also includes food provided to military personnel, and food served in hospitals, institutions, and schools, where separate sales figure for food are unavailable.

Statistical Highlights

Consumer Price Index for all Urban Consumers, U.S. Average (not seasonally adjusted)

	Annual				1978				1979			
	1977 ¹	1978	Nov	Dec	Jan	Feb	Mar	Apr	May	June	July	
1967 = 100												
Consumer price index, all items	181.5	195.4	202.0	202.9	204.7	207.1	209.1	211.5	214.1	216.8	218.9	
Consumer price index, less food	178.4	191.2	197.8	198.6	199.8	201.8	203.8	206.3	208.9	211.8	214.2	
All food	192.2	211.4	217.8	219.4	223.9	228.2	230.4	232.3	234.3	236.4	236.9	
Food away from home	200.3	218.4	228.9	227.4	230.2	233.4	236.0	238.4	241.1	242.7	244.9	
Food at home	190.2	210.2	216.1	217.9	223.1	228.0	229.9	231.7	233.4	234.2	235.5	
Meats ²	174.2	206.8	217.6	218.4	227.6	238.6	244.2	248.3	252.1	249.6	248.0	
Beef and veal	163.6	201.0	212.5	215.4	227.7	243.4	252.1	262.5	270.3	266.9	268.4	
Pork	188.8	213.1	222.6	223.4	226.7	232.3	233.4	235.9	232.2	217.2	215.1	
Poultry	158.7	172.9	176.0	177.6	181.2	185.8	189.9	189.9	188.0	187.2	186.2	
Fish	251.5	275.4	285.4	286.5	290.4	293.0	294.0	285.6	297.2	301.0	304.3	
Eggs ³	166.9	157.8	167.0	179.5	180.4	182.1	181.3	179.3	172.9	161.9	165.8	
Dairy products ³	173.9	185.6	193.2	196.4	198.4	200.6	201.5	202.4	203.8	205.5	206.3	
Fats and oils ⁴	191.4	209.6	216.9	217.6	218.1	219.2	219.5	222.5	225.3	226.3	227.4	
Fruits and vegetables	191.6	212.9	210.4	209.7	221.6	226.5	226.9	226.5	226.8	233.8	238.1	
Fresh	193.4	218.5	207.7	203.2	224.3	232.7	230.5	230.7	231.0	243.3	249.4	
Processed	188.8	208.7	215.3	218.9	220.7	221.6	222.7	223.9	224.2	226.4	227.8	
Cereals and bakery products	183.5	199.9	206.6	207.9	210.0	212.2	213.5	214.5	216.2	217.8	220.1	
Sugar and sweets	229.4	257.5	263.8	264.9	268.2	270.2	272.1	274.2	276.3	277.4	279.4	
Beverages, nonalcoholic	322.4	340.8	340.9	341.7	345.4	347.8	347.1	347.7	349.3	350.4	354.6	

¹Revised ²Beef, veal, lamb, pork, and processed meat ³Excludes butter ⁴Excludes butter

Livestock Products: Per Capita Consumption Indexes, Quarterly¹

	1977	1978	1979				1979 ²			
			I	II	III	IV	I	II	III	IV
			1967 = 100							
Meat	107.0	103.0	101.7	101.7	104.7	100.6	99.0	100.2	104.6	
Poultry	119.4	125.9	123.2	127.8	142.1	118.3	134.6	139.1	152.1	
Eggs ³	84.8	86.5	85.5	85.6	89.4	87.5	86.5	87.6	89.4	
Dairy prod. excluding butter ..	101.0	101.5	100.9	101.9	101.7	101.9	102.2	102.2	101.8	
Animal fats including butter ..	81.0	83.3	98.7	81.7	88.7	88.8	61.5	67.0	68.3	
Total livestock products ³ ..	102.5	101.3	100.6	100.7	104.0	100.0	100.0	101.3	104.7	

¹Civilian consumption only. Quantities of individual foods measured in pounds equivalent to the form sold by retail food stores, combined in terms of average 1967-69 retail prices.

²Forecasts

³Excludes fish

Civilian Per Capita Consumption of Major Food Commodities (Retail Weight)¹

	1970	1972	1973	1974	1975	1976	1977	1978 ²	1979 ³
	Pounds								
Meats	151.4	153.5	142.6	152.5	145.4	155.3	154.6	149.3	147.7
Beef	84.1	85.9	81.1	86.4	88.9	95.7	93.2	88.9	79.0
Veal	2.4	1.8	1.5	1.9	3.5	3.3	3.2	2.5	1.6
Lamb and mutton	2.9	2.9	2.4	2.0	1.8	1.7	1.5	1.4	1.4
Pork	62.0	62.9	57.6	62.2	51.2	54.8	56.7	56.5	64.8
Fish (edible weight)	11.8	12.5	12.9	12.2	12.3	13.0	12.3	13.4	13.4
Poultry products									
Eggs	39.5	39.1	37.3	36.6	35.4	34.8	34.5	36.2	35.8
Chicken (ready-to-cook)	40.5	42.9	40.7	41.1	40.6	43.3	44.9	47.7	51.8
Turkey (ready-to-cook)	6.0	9.0	8.5	8.9	8.6	9.2	9.2	9.4	10.2
Dairy products									
Cheese	11.5	13.2	13.7	14.6	14.5	16.8	16.4	17.3	17.9
Condensed and evaporated milk	7.1	6.4	6.0	6.6	5.0	5.0	4.5	4.2	4.4
Fluid milk and cream (product weight)	296.0	298.0	293.0	288.0	291.1	292.0	288.4	285.9	284.2
Ice cream (product weight)	17.7	17.4	17.5	17.5	18.7	18.1	17.7	17.8	17.7
Fats and Oils—Total fat content	53.0	54.3	54.3	53.2	53.4	56.1	54.4	55.0	57.6
Butter (actual weight)	5.3	4.9	4.8	4.6	4.8	4.4	4.4	4.5	4.5
Margarine (actual weight)	11.0	11.3	11.3	11.3	11.2	12.2	11.5	11.4	11.5
Lard	4.7	3.6	3.4	3.2	3.0	2.7	2.3	2.2	2.3
Shortening	17.3	17.7	17.3	17.0	17.3	18.1	17.6	18.2	18.2
Other edible fats and oils	18.2	19.8	20.8	20.3	20.3	22.0	21.6	22.6	23.4
Fruits									
Fresh	79.3	74.0	74.2	75.9	81.3	83.7	79.6	81.6	80.5
Citrus	28.1	25.7	26.9	27.1	28.7	28.5	25.2	26.3	24.3
Noncitrus	51.2	48.1	47.3	48.8	52.6	55.2	54.4	55.3	56.2
Processed									
Canned fruit	23.3	21.4	21.3	19.6	19.3	19.2	19.9	19.0	18.0
Canned juice	14.6	15.6	15.9	14.7	16.2	16.2	15.4	17.4	17.5
Frozen (excluding juices)	8.6	10.4	11.2	11.3	12.6	12.2	11.9	11.3	11.8
Chilled citrus juices	4.7	5.2	5.3	5.2	5.7	6.2	5.8	6.2	6.4
Dried	2.7	2.0	2.6	2.4	3.0	2.6	2.5	2.0	2.3
Vegetables									
Fresh ⁴	91.0	91.6	93.0	95.0	94.1	94.2	91.8	93.3	97.2
Canned	53.0	55.2	57.7	56.9	55.1	55.7	56.2	54.1	55.9
Frozen (excluding potatoes)	9.6	9.9	10.6	10.1	9.6	10.2	10.3	10.8	11.1
Potatoes ⁵	115.3	116.9	114.4	112.3	120.3	114.4	119.8	122.9	123.0
Sweetpotatoes ⁵	5.2	4.5	4.6	4.9	5.0	4.9	4.5	5.0	5.0
Grains									
Wheat flour ⁶	110	109	112	110	113	118	114	114	112
Rice	6.7	7.0	7.0	7.6	7.7	7.2	7.8	5.8	6.9
Other									
Coffee	10.4	10.5	10.1	9.5	9.0	9.4	6.7	7.5	7.8
Tea	7	8	8	8	8	8	9	7	7
Cocoa	3.1	3.5	3.4	3.0	2.5	3.0	2.7	2.7	2.7
Peanuts (shelled)	5.9	6.2	6.6	6.4	6.5	6.3	6.6	6.6	6.6
Dry edible beans	5.9	6.3	6.4	6.7	6.5	6.3	6.1	5.9	5.9
Melons	21.2	19.9	19.8	17.1	17.3	18.6	19.3	20.1	18.9
Sugar (refined)	101.8	102.8	101.5	96.6	90.2	94.7	95.7	83.1	91.6

¹Quantity in pounds, retail weight unless otherwise shown. Data are calendar year basis except for dried fruits, fresh citrus fruits, peanuts, and rice which are on a crop-year basis. ²Estimated. ³Commercial production for sale as fresh produce. ⁴Including fresh equivalent of processed. ⁵White.

whole wheat, and semolina flour including use in bakery products. Note: Historical consumption and supply-utilization data for food may be found in Food Consumption, Prices, and Expenditures, Ag Econ. Report 138 and related supplements, ERS, USDA.

Producer Price Indexes, U.S. average (not seasonally adjusted)

	Annual		1978		1979				
	1977	1978	July	Feb	Mar	Apr	May	June	July
				1967	100				
Finished goods ¹	180.6	194.6	195.0	207.7	209.1	211.2	212.4	213.4	215.8
Consumer foods	189.1	206.0	210.4	204.6	226.3	227.5	226.6	223.0	224.6
Fruits and vegetables ²	192.2	218.2	232.3	259.5	232.2	237.2	226.5	226.2	226.6
Eggs	162.0	158.6	159.2	176.7	199.9	185.5	163.8	170.7	167.6
Bakery products	188.5	201.2	202.6	214.3	214.6	216.8	216.3	217.0	218.4
Meats	179.7	209.5	213.2	248.8	243.4	246.2	242.0	233.7	228.0
Beef and veal	157.5	202.2	213.2	243.1	250.0	270.1	264.4	254.1	245.1
Pork	190.1	219.1	213.1	239.6	224.2	210.7	203.2	196.0	191.9
Poultry	173.3	194.0	231.6	205.1	207.7	201.3	204.9	179.2	179.7
Fish	294.3	313.0	313.4	371.0	367.0	377.9	383.2	393.0	399.5
Dairy products	173.4	188.4	188.1	203.1	204.8	207.0	207.9	206.3	209.0
Processed fruits and vegetables	187.3	202.6	200.3	219.3	219.5	220.4	221.3	221.4	223.1
Refined sugar ³	n.a.	100.3	106.7	114.7	115.0	113.5	114.2	113.7	113.7
Vegetable oil and products	195.6	209.4	217.6	214.2	215.2	221.3	219.3	219.7	225.5
Consumer finished goods less foods	172.1	188.9	184.6	194.8	196.7	199.2	201.6	204.7	208.4
Beverages, alcoholic	139.7	148.0	147.8	155.0	155.6	157.4	159.9	160.8	161.1
Beverages, nonalcoholic	198.1	212.1	211.7	224.9	224.9	224.9	226.3	226.5	228.0
Apparel	147.3	152.4	152.8	157.5	158.1	159.3	159.3	160.0	160.1
Footwear	168.7	183.2	182.2	203.6	219.5	212.6	215.8	219.7	222.3
Tobacco products	179.8	198.5	205.1	213.4	213.0	213.9	213.9	213.9	214.6
Intermediate materials ⁴	201.7	215.5	216.0	220.3	231.5	235.3	237.7	239.8	244.2
Materials for food manufacturing	101.7	202.3	203.9	217.3	219.6	222.2	222.4	222.2	226.4
Flour	118.9	141.5	143.0	153.1	155.6	155.3	165.5	171.4	187.3
Refined sugar ⁵	n.a.	100.3	105.0	115.5	116.0	116.6	116.2	117.7	118.3
Crude vegetable oils	197.5	219.2	225.1	242.2	246.0	242.3	238.8	250.1	264.4
Crude materials ⁶	214.4	248.2	245.4	270.4	276.6	279.9	282.2	283.0	287.3
Foodstuffs and feedstuffs	180.8	215.4	222.8	243.7	247.4	251.5	251.9	248.2	254.1
Fruits and vegetables ²	192.2	218.2	252.3	259.6	232.2	237.2	226.5	252.2	226.6
Grains	165.0	182.5	183.8	189.3	192.0	198.3	210.3	218.7	247.4
Livestock	173.0	228.1	226.8	266.5	275.0	284.0	280.7	264.0	256.8
Poultry, live	175.4	199.8	246.5	217.8	217.6	209.4	216.3	182.9	183.8
Fibers, plant and animal	202.3	193.4	189.9	205.1	197.8	197.8	207.8	219.5	207.6
Milk	202.6	219.7	216.3	244.6	243.7	243.7	242.0	243.8	247.6
Oilseeds	236.4	224.1	232.2	245.9	250.0	252.9	248.1	250.7	261.8
Coffee, green	565.1	378.2	370.4	318.7	322.2	329.4	351.3	396.1	480.7
Tobacco, leaf	176.1	188.8	186.2	202.5	202.5	n.a.	206.3	206.3	199.8
Sugar, raw cane	149.5	190.2	182.7	197.7	195.2	197.0	195.1	205.5	208.4
All commodities	194.2	209.3	210.6	224.1	226.7	229.7	231.8	233.1	235.6
Industrial commodities	195.1	209.4	209.9	222.5	225.4	228.6	231.1	233.5	237.2
All foods ⁷	186.8	206.5	210.7	224.5	225.9	227.5	226.4	223.9	225.0
Farm products and processed foods and feeds	105.8	206.7	210.5	227.2	229.0	231.2	230.8	229.0	232.0
Farm products	152.5	212.7	219.9	240.9	242.8	245.9	245.2	242.8	246.0
Processed foods and feeds	136.1	202.6	204.5	213.9	220.5	222.3	222.1	220.7	223.0
Cereal and bakery products	173.2	190.2	191.9	199.1	200.1	203.0	205.0	206.4	210.5
Sugar and confectionery	177.5	197.9	196.5	208.4	208.4	208.7	209.1	212.5	215.7
Beverages	200.9	200.1	193.8	201.1	201.2	201.6	205.3	200.3	213.7
Wholesale spot prices, 9 foodstuffs	200.2	239.1	234.9	250.2	251.5	251.8	254.4	256.5	259.3

¹Commodities ready for sale to ultimate consumer

²Fresh and dried

³Consumer size packages Dec 1977 = 100

⁴Commodities requiring further processing to become finished goods

⁵For use in food manufacturing

⁶Products entering market for the first time which have not been manufactured at that point

⁷Includes all processed food (except soft drinks, alcoholic beverages, and meat/added animal feeds) plus eggs and fresh and dried fruits and vegetables

n.a. = not available

Market Basket of Farm Foods

	Annual		1978 ^a				1979	
	1977	1978	II	III	IV	I	II	
Market basket ²								
Retail cost (1967=100)	179.2	199.4	199.1	204.2	206.2	217.4	223.8	
Farm value (1967=100)	170.1	207.4	211.5	213.5	214.7	237.4	266.9	
Farm-retail spread (1967=100)	180.0	194.5	191.5	198.5	201.1	206.4	216.4	
Farm value/retail cost (%)	37.5	39.3	40.1	39.5	39.3	41.2	39.8	
Meat products								
Retail cost (1967=100)	174.3	206.8	207.8	213.5	217.4	236.8	260.0	
Farm value (1967=100)	169.8	211.5	215.8	216.2	223.8	259.3	265.2	
Farm-retail spread (1967=100)	180.0	200.6	197.5	204.9	204.1	207.7	243.3	
Farm value/retail cost (%)	55.0	57.8	58.6	57.2	58.1	61.8	57.6	
Dairy products								
Retail cost (1967=100)	173.3	185.5	183.3	186.7	193.6	200.2	203.9	
Farm value (1967=100)	187.2	204.3	199.6	206.6	217.9	224.6	228.7	
Farm-retail spread (1967=100)	161.3	169.2	169.1	169.4	172.3	178.9	182.3	
Farm value/retail cost (%)	50.3	51.3	50.7	51.5	52.4	52.2	52.2	
Poultry								
Retail cost (1967=100)	158.1	172.9	172.9	180.7	177.0	185.6	188.4	
Farm value (1967=100)	178.5	202.7	209.8	221.2	197.0	210.7	212.7	
Farm-retail spread (1967=100)	138.4	144.1	137.2	141.6	157.6	161.4	164.9	
Farm value/retail cost (%)	55.5	57.6	58.7	60.2	54.7	58.8	58.5	
Eggs								
Retail cost (1967=100)	168.1	157.8	146.6	157.5	168.5	181.3	171.4	
Farm value (1967=100)	187.5	178.7	154.4	181.3	194.0	215.0	191.6	
Farm-retail spread (1967=100)	142.5	127.5	136.3	123.1	130.5	132.5	141.7	
Farm value/retail cost (%)	65.5	66.9	62.2	68.0	68.3	70.1	68.2	
Cereal and bakery products								
Retail cost (1967=100)	183.7	199.9	197.4	202.7	206.5	211.9	218.2	
Farm value (1967=100)	138.2	163.9	169.9	164.1	164.9	168.6	184.5	
Farm-retail spread (1967=100)	193.2	207.3	203.1	210.7	215.2	220.9	222.7	
Farm value/retail cost (%)	12.9	14.1	14.8	13.9	13.7	13.6	14.8	
Fresh fruits								
Retail cost (1967=100)	187.9	230.1	228.8	262.6	230.7	225.6	259.8	
Farm value (1967=100)	177.2	228.8	245.0	269.8	207.4	206.8	230.3	
Farm-retail spread (1967=100)	192.7	230.7	221.5	265.5	241.2	234.0	273.0	
Farm value/retail cost (%)	29.2	30.8	33.2	30.8	27.9	28.4	27.5	
Fresh vegetables								
Retail cost (1967=100)	200.6	216.2	238.2	219.4	201.3	240.0	220.1	
Farm value (1967=100)	205.4	218.3	271.2	227.1	179.7	252.2	201.8	
Farm-retail spread (1967=100)	198.3	216.2	222.7	215.7	211.5	234.3	228.7	
Farm value/retail cost (%)	32.8	32.0	36.4	33.1	29.5	33.6	29.3	
Processed fruits and vegetables								
Retail cost (1967=100)	190.2	208.7	206.2	209.9	215.6	221.7	224.5	
Farm value (1967=100)	188.5	213.3	221.6	226.3	230.2	233.6	238.0	
Farm-retail spread (1967=100)	190.6	207.7	202.8	206.3	212.3	219.0	221.5	
Farm value/retail cost (%)	18.0	18.5	19.5	19.5	19.4	19.1	19.2	
Fats and oils								
Retail cost (1967=100)	192.0	209.6	207.8	214.5	216.9	218.9	224.7	
Farm value (1967=100)	249.3	257.4	273.5	268.1	255.4	272.8	284.6	
Farm-retail spread (1967=100)	169.9	191.1	182.5	193.8	202.1	198.2	201.5	
Farm value/retail cost (%)	36.1	34.1	36.6	34.7	32.7	34.6	35.2	

¹Quarterly data revised

²Market basket statistics are based on the weighting structure of the Consumer Price Index for all urban consumers (CPI-U). Retail costs are based on indexes of retail prices for domestically produced farm foods from the CPI-U published monthly by the Bureau of Labor Statistics. The farm value is the payment to farmers for quantity of farm product equivalent to retail unit, less allowances for

byproduct. Farm values are based on prices at first point of sale and may include marketing charges such as grading and packing for some commodities. The farm-retail spread, the difference between the retail price and the farm value, represents charges for assembling, processing, transporting, and distributing these foods.

Personal Consumption Expenditures: Major Items

	1976	1977	1978	1977		1978				1979 ¹	
				III	IV	I	II	III	IV	I	II
Billions — Current dollars ²											
Food excluding alcoholic beverages	199.1	217.6	235.4	218.3	224.0	229.1	238.2	241.5	248.8	256.0	263.1
For use at home	149.5	161.4	177.7	161.9	166.4	170.7	170.0	178.7	184.2	190.7	197.5
Food away from home	49.6	55.6	61.7	56.4	57.6	58.4	61.2	62.8	64.6	67.3	45.6
Nondurables excluding food	243.5	282.0	287.0	261.4	272.8	273.3	281.0	290.2	304.8	311.7	317.7
Clothing and shoes	75.7	81.5	89.0	81.4	86.8	82.9	87.5	90.5	95.3	94.0	96.9
Gas and oil	42.8	46.5	51.2	46.0	47.5	48.3	49.0	51.5	55.8	59.8	60.4
Fuel oil and coal	12.2	13.5	14.9	13.1	13.7	15.8	15.2	14.3	14.3	18.3	17.3
Alcoholic beverages	26.7	28.2	30.0	28.1	28.5	28.6	29.6	30.6	31.1	32.3	33.1
Other	86.2	92.4	101.9	92.8	96.2	96.7	99.7	103.3	108.1	109.3	110.0
Durable goods	156.6	178.4	197.5	177.4	181.2	183.5	187.8	199.5	209.1	213.4	208.1
Motor vehicles and parts	69.7	81.5	85.7	75.5	84.0	84.1	92.5	89.8	92.6	96.4	88.8
Furniture and household equipment	63.9	71.3	77.7	72.0	75.3	72.1	76.5	78.9	83.2	83.6	84.0
Other durables	23.0	25.6	30.0	25.8	27.9	27.3	28.8	30.7	33.3	33.4	35.5
Services	491.0	549.2	616.2	557.5	571.1	591.8	605.8	625.8	641.4	661.6	686.2
Housing	166.4	184.6	207.3	186.9	192.0	198.1	204.1	210.1	217.0	222.5	236.8
Household operation	72.6	81.6	91.3	83.7	84.6	89.6	88.8	92.6	94.1	97.1	99.4
Transportation	37.9	44.2	52.6	45.0	47.3	49.7	52.1	53.7	55.0	56.2	54.5
Other	214.0	238.8	264.9	241.9	247.3	254.4	260.6	269.3	275.4	285.8	296.0
Total personal consumption expenditures	1,090.2	1,206.5	1,340.1	1,214.5	1,255.2	1,276.7	1,322.9	1,356.9	1,403.9	1,444.7	1,475.0
Total disposable personal income	1,184.4	1,303.0	1,451.8	1,319.1	1,359.6	1,391.6	1,433.3	1,468.4	1,513.9	1,563.5	1,602.1
Billions — Constant dollars ²											
Food excluding alcohol	136.7	142.4	142.5	142.4	144.9	143.3	141.8	141.6	143.2	141.9	143.1
Food for use at home	101.5	105.5	104.9	105.3	107.5	106.4	104.1	105.9	105.1	103.6	106.7
Food away from home	35.2	36.9	37.6	37.1	37.4	36.9	37.7	37.7	38.1	38.4	36.4
Nondurables excluding food	183.5	188.0	197.1	186.9	193.1	190.0	194.4	198.8	205.3	205.2	200.9
Durables	125.9	137.8	144.8	136.9	143.0	137.8	145.8	144.8	150.1	150.1	144.5
Services	373.2	389.5	407.4	391.8	395.6	402.4	404.2	410.0	413.1	418.5	426.8
Total personal consumption expenditures	619.4	657.7	691.7	658.0	676.6	673.5	686.3	695.1	711.8	715.7	714.8

¹Preliminary

²Seasonally adjusted at annual rates

Source: U.S. Department of Commerce. Totals may not add due to rounding

Per Capita Food Consumption Index¹

	1960	1970	1973	1974	1975	1976	1977	1978 ²	1979 ³
	1967 = 100								
Meat, poultry, and fish	89.7	104.7	100.4	105.0	102.7	109.6	109.2	107.0	106.3
Meat	92.1	104.0	97.7	104.5	101.2	107.9	107.0	103.0	100.5
Poultry	75.3	107.0	100.7	110.6	100.1	116.0	118.4	125.9	130.7
Fish	96.9	110.6	121.2	114.6	113.7	120.8	119.4	124.5	126.4
Eggs	104.2	97.0	91.6	89.9	87.0	85.5	84.8	86.5	88.5
Dairy products ⁴	103.4	99.3	100.6	99.1	99.0	101.6	101.9	101.5	102.5
Fats and oils	96.1	105.9	107.6	104.9	105.5	109.8	106.5	111.9	114.3
Animal	116.7	87.7	73.0	72.4	65.2	60.3	61.0	63.3	72.3
Vegetable	82.7	119.3	133.6	126.9	135.3	146.4	140.2	147.9	145.2
Fruits ⁵	105.0	103.0	99.6	99.2	105.6	108.4	106.7	105.4	107.6
Fresh	114.0	102.0	94.2	97.0	105.6	103.2	106.6	106.5	110.1
Processed	98.3	104.3	106.5	102.1	107.9	108.6	106.5	106.2	105.0
Vegetables ⁶	99.2	101.9	105.3	104.5	104.2	106.5	105.6	105.0	106.6
Fresh	107.4	109.6	101.0	101.7	102.2	103.0	103.2	104.8	106.0
Processed	83.9	104.1	111.4	109.4	107.7	111.2	109.6	107.6	107.4
Potatoes and sweetpotatoes	70.6	110.3	110.1	108.2	114.0	109.5	112.1	119.0	119.2
Fresh	133.8	95.0	83.5	80.0	99.8	85.9	88.4	87.8	86.3
Processed	12.2	122.3	131.0	132.2	132.2	128.1	130.6	143.5	145.1
Beans, peas, and nuts	94.8	90.0	105.3	101.0	100.6	104.7	101.6	103.2	104.0
Cereal products	102.2	97.7	97.2	95.4	96.0	104.0	100.8	100.9	101.7
Sugar	97.9	106.0	110.6	100.7	105.6	112.0	115.3	113.7	113.5
Coffee, tea, and cocoa	99.6	93.9	97.7	92.1	89.7	91.6	76.5	79.1	78.6
Total food	95.7	102.4	101.7	102.3	101.5	105.6	104.6	104.5	104.9
Animal products	95.5	102.0	99.6	101.4	99.1	103.5	103.0	102.2	102.4
Crops ⁷	91.0	102.9	105.2	103.3	104.2	108.4	106.3	106.9	107.8

¹Excludes consumption only. Quantities of individual foods are combined in terms of 1967-69 adult per capita.

²Provisionary.

³As before but for.

⁴As before but for baby food.

⁵Excludes soup, baby food, dry beans and peas, potatoes, and sweetpotatoes.

⁶Excludes meats, milk, soup, and baby food in addition to groups shown separately.

⁷As before.